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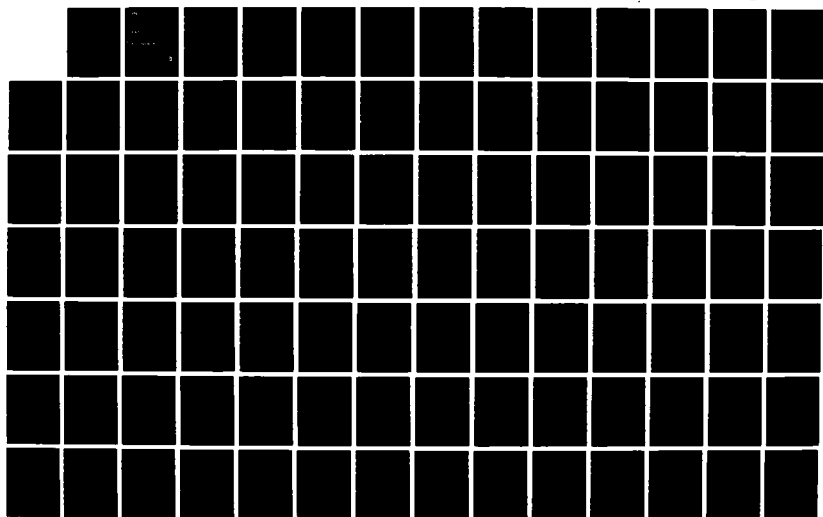
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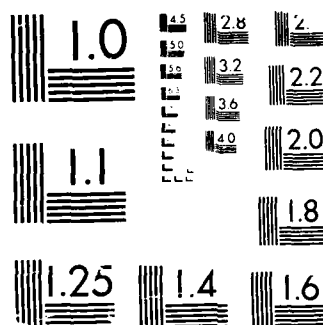
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US Army Corps  
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## ECONOMIC ANALYSIS PACKAGE

### USERS MANUAL

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REVISED FEBRUARY 1988

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This users manual provides information on the use of the ECONPACK Computer Program, an interactive computer system which assists the Department of Defense in the preparation of life cycle costs analysis reports in support of funding requests for construction programs as well as many other types of programs. The program is in accordance with AR 11-28 "Economic Analysis and Program Evaluation for Resource Management." (Key word)		



# ECONPACK ECONOMIC ANALYSIS PACKAGE USERS MANUAL

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## CHAPTER 1 THE SEVEN STEP ECONOMIC ANALYSIS PROCESS

### 1.0 Establishing and Stating Objective

The objective is the result to be achieved; that is, the objective states what the alternatives are to accomplish. The statement of the objective should clearly define and quantify (to the extent possible) the function to be accomplished. The statement of the objective should not presume a specific means of achievement (i.e., course of action to bring about the desired result). If such a presumption is made, the statement of the objective undermines the analytical purpose of the EA by prejudging the result. Compare, for example, the following statements of objectives:

- o to provide housing for 100 unaccompanied officers, and
- o to construct a 100-person Unaccompanied Officers Quarters.

The first statement is preferred because it is not in the form of a solution. A quantitative statement of the objective is beneficial because it provides an explicit test of the adequacy of possible alternatives.

Establishment of the objective is often a policy matter which lies beyond the scope of the individual responsible for an EA. The "analyst," however, needs to recognize the significance of this step in the EA process.

### 1.1 Identifying Alternatives

After the objective is established and properly stated, the next step is to consider all reasonable ways of satisfying that objective. Since the EAs basic purpose is to help the decision-maker allocate resources efficiently, it is vital that careful attention be given to identification of all reasonable alternatives. The recommendation resulting from the EA will, after all, come from among options evaluated.

For a possible alternative to be considered reasonable, it should be consistent with Army regulations and legal requirements. Adequacy and financial feasibility are other key considerations in identification and definition of reasonable alternatives. Adequacy refers to the capacity of the potential alternative to meet the actual goal or objective. For a potential alternative to be financially feasible, it must be compatible with funding realities.

The following alternatives, at a minimum, should be considered:

STATUS QUO - Assume existing facilities will continue to be used.  
NEW CONSTRUCTION - A new, on-post facility.  
MODIFICATION OF AN EXISTING FACILITY - Renovation and/or addition to an existing facility.  
OTHER INSTALLATION - Use of other DoD installation for training or facilities.  
LEASE - Long term lease of facility.

An alternative can be eliminated from further considerations if it does not meet the objective. The reasons for eliminating an alternative from further consideration should be provided in a narrative summary.

### 1.2 Formulating Assumptions

EAs are future oriented in that they are focused on current decisions which have benefit and cost implications for future years. To the extent possible, EAs should be based on objective "facts." Since the future is not completely known with certainty, it is often necessary to make assumptions in order to proceed with an EA. All assumptions should be documented in the economic analysis.

Examples of assumptions include: the functional life of an asset, the level or extent of future requirements for a particular function, and the usefulness of a facility after the present objective is fulfilled. It is often possible to base these assumptions (or "estimates") on historically or technically factual information.

### 1.3 Determining Costs and Benefits

This step is often the most difficult and time-consuming component of an EA. The analyst must decide what data are needed, how relevant data are to be collected and documented, and when the data in-hand are sufficiently reliable to be used in an EA.

The principal benefit to be derived from a military construction project is fulfillment of the stated objective. Since this is a benefit common to all viable alternatives, its inclusion in the EA calculations would not affect the ranking of alternatives. Consequently, dollar quantification of the major benefit is unnecessary. Emphasis is, therefore, placed on the costs of the alternatives. Dollar quantifiable benefits (other than meeting the stated objective) of each alternative are treated as cost offsets for that alternative.

Costs and benefits must be determined for the entire useful life of the project. Timing is important in investment decision making as estimates are needed for the year in which a cost is to be incurred or a benefit is to be received. If actual dollar amounts are known, it should be realized that assumptions may be necessary with respect to timing.

The costs and benefits associated with each alternative under consideration should be quantified whenever possible, so they may be included in the EA calculations. When quantification is not possible, the analyst should still attempt to document significant (nonquantifiable) costs and benefits so that these may be considered when comparing alternative courses of action.

The following costs are provided, as a guide, for the types of costs associated with construction alternatives:

Initial Construction/Renovation Cost

Maintenance and Repair Costs

Periodic Repair/Replacement:            Painting,    New    Roof,    HVAC  
Replacement

Annual Utilities Costs

Other Costs:    Security, Administration, Moving Costs

Land

Salvage/Demolition

Equipment (Purchase/Maintenance/Operating Costs)

Furnishings

Allowances

Transportation/Per Diem

Personnel

Annual Rent

Services (Custodial, Trash Removal, Snow Removal)

#### 1.4 Comparing Alternatives

The aim of an EA is normally to choose among alternative courses of action. The comparison of the costs and benefits is the central focus of the EA process. The purpose of this step in the EA process is to establish a ranking of alternatives based on the costs of and benefits derived from each proposed alternative.

In comparing alternatives, it is important to consider non-quantifiable benefits and costs as well as the quantifiable ones which enter into the calculations. This is especially true in situations in which the quantitative results of two or more alternatives are equal (or almost equal). That is, the smaller the quantitative variation among alternatives, the greater the importance of other considerations.

In ECONPACK, the basis of comparison, between alternatives, is Net Present Value.

### 1.5 Performing Sensitivity Analysis

A sensitivity analysis is performed when there are large uncertainties about costs, timing or other impact data or when the results of the comparison step do not reveal a clearly superior alternative. A sensitivity analysis allows the analyst to engage in a "what if" process to determine how critical the particular assumptions used in the EA are to the EA results. In the sensitivity analysis, selected parameters or assumptions are allowed to vary to determine whether or not a change in costs is likely to lead to a change in ranking of alternatives.

Since the purpose of the sensitivity analysis is to test how sensitive the results are to variation in costs, it is especially important to vary expense items which are relatively large and uncertain. If small variations in expense items cause a change in alternative ranking, the analyst may be well-advised to re-evaluate the estimates and refine them in order to reduce the degree of uncertainty.

By including the results of the sensitivity analysis in the final EA presentation, the analyst assures the decision-maker and reviewer that uncertainties have been considered.

### 1.6 Reporting Results and Recommendations

The EA report should be comprehensive and should include documentation of data sources. It should serve as a "stand-alone" document for the decision-maker to use in deciding on the appropriate use of resources.

The structure of the report should begin with a summary of the analysis, including recommendations based on the content of the EA. The actual decision is based on non-economic as well as economic considerations. The EA recommendations are an important input into the final decision-making process.

Following the summary and recommendations, the EA report should provide a step-by-step explanation of the basis for the recommendations. This explanation should ideally follow the structure of the EA process itself. That is, it should include: statement of objective (requirement to be met); definition of alternatives; explanation of assumptions; cost and benefit data and sources; comparative ranking of alternatives based on costs and benefits; and sensitivity analysis results.

## 1.7 SUMMARY OF GOVERNING REGULATIONS

The Department of Army has two regulations governing the use of economic analysis. AR 11-28, Economic Analysis and Program-Evaluation for Resource Management, provides guidelines for conducting an economic analysis for Army projects. AR 415-15, Military Construction, Army (MCA) Program Development, applies these general rules to military construction projects. OMB Circular A-94, Discount Rates to be Used in Evaluating Time-Distributed Costs and Benefits, lists discount rates. OMB Circular A-104, Evaluating Leases of Capital Assets, applies to the case where private sector financed facilities are compared to military construction projects. To obtain a copy of regulation AR 11-28, contact HQDA (DACA-CAF), Washington, DC, 20310. To obtain a copy of AR 415-15, OMB Circular A-94 and A-104, contact: HQDA (CEEC-PESO), Washington, DC, 20314.

**Applicability:** All proposed construction projects submitted to headquarters for approval must be accompanied by an economic analysis or a statement justifying why an economic analysis was not performed.

In general, OMB and DOD policy requires that EAs be performed in constant dollars using a 10% discount rate. If one of the alternatives is a leased facility then Circular A-104 guidance applies. In this case, a current dollar analysis (with inflation) is required using a discount rate equal to market discount rates of Government bonds with the same term as the length of the analysis period. ECONPACK has been designed to satisfy all of the requirements of the documents listed above.

## 1.8 TYPES OF ECONOMIC ANALYSIS

Army guidance categorizes EAs into two separate types: primary economic analysis and secondary economic analysis. The structure of the economic analysis process is similar whether the EA being produced is primary or secondary. However, budgetary effects, report formats, and certain computations differ somewhat depending on analysis type.



### 1.3.1 Primary Economic Analysis

A primary EA is designed to determine whether an existing situation or procedure should be changed in some way to take advantage of dollar savings available through some other situation or procedure. Direct comparison is made between new alternatives (new ways of meeting an existing requirement) and the status quo alternative (the way the requirement is currently being met). If two or more new alternatives are being considered, each is compared directly to the status quo alternative. The one with the lowest present value is economically the best solution.

The focus is on the net savings resulting from the new approach to meeting the requirement in place of the status quo approach. For example, consider an installation which currently purchases certain maintenance services from a local company. Continuation of this practice would represent the status quo alternative. If the same maintenance services could be obtained by employment of additional personnel at the installation, this would represent a new alternative. A primary EA would not be concerned with justification of the need for the maintenance services, but it would address the question of whether or not the services could be obtained at less cost if the new alternative (additional personnel) were instituted in place of the status quo alternative (purchase from a local company). If the new alternative turns out to be less costly and is adopted, the effect is to reduce budgetary outlays.

### 1.8.2 Primary Economic Analysis Report

The Primary Economic Analysis Report format presents the net present value of the cost for the proposed change and the net present value of the savings estimated to result from the proposed change.

This report also includes the savings to investment ratio (SIR) and the discounted payback period (DPP) for each proposed alternative when compared to the status quo. Both of these measures are indicators of the attractiveness of implementing the proposed new alternative in place of the status quo alternative. The SIR is net savings divided by net investment (both in terms of present value). The DPP is the number of years from the time the project (alternative) is initiated to the time when the present value of savings is equal to the present value of investment costs. The larger the SIR (i.e., the greater savings are relative to the investment required to achieve them) and the smaller the DPP (i.e., the shorter the period required for savings to offset the investment costs which generate them), the more attractive is the alternative.

### 1.8.3 Secondary Economic Analysis

A secondary economic analysis is used to determine which of two or more alternative courses of action would most economically fulfill an objective or requirement which is not currently being met. Since the objective is not already being satisfied in this case, there is no status quo alternative; all alternatives begin on an equal footing and each must be compared against each of the others. In the absence of a status quo alternative as a fixed standard of reference, the focus of this type of analysis is on net benefits (benefits minus costs) rather than on savings. In the common case of equivalent benefits for each of the alternatives under consideration (i.e., benefits or effects sufficient to meet the need specified in the objective), the problem is one of cost minimization. Present value of costs are calculated for each of the alternatives and then ranked; other things being equal, the least-cost alternative is preferred.

### 1.8.4 Secondary Economic Analysis Report

The Secondary Economic Analysis Report format presents the net present value of the project costs for a given alternative. This format focuses upon calculation of costs separately for each alternative under consideration. The format is repeated for each of the alternatives. The Secondary Economic Analysis Report allows the analyst and the decision-maker to directly compare the costs (in present value terms) of all alternatives.

This report format also shows an equivalent uniform annual cost (EUAC) for each alternative. The EUAC is the amount of money which, if paid in equal annual installments over the life of a project, would pay for the project. That is, the discounted value of this hypothetical uniform cost stream is equal to the actual estimated present value of project costs. The alternative with the lowest EUAC is the least-costly alternative. The EUAC is useful to the analyst and the decision-maker when the economic lives of alternatives differ.

Some project alternatives, in either a secondary analysis or a primary analysis, may have significant benefits which need to be noted. Both Secondary and Primary Economic Analysis Reports have "benefits" sections in which advantages of particular alternatives can be described. This allows for nonquantifiable and non-dollar quantifiable benefits, as well as dollar quantifiable benefits, to be communicated and documented.

CHAPTER 2  
SELECTED CONCEPTS USED IN ECONOMIC ANALYSIS

2.0 DISCOUNTING

Most military construction EAs are essentially cost-minimization problems, i.e., analyses of how a given objective can be met for the least cost. However, the dollar costs are not completely comparable because they occur at different points in time. The discounting process adjusts dollar amounts so that costs incurred at different points in time can be directly and meaningfully compared. This adjustment reflects the fact that the significance attached to a particular dollar amount to be paid (or received) at a later date is less than the significance attached to the same dollar amount to be paid (or received) now.

The discounting process can most easily be understood by first examining its opposite, the compounding process. Assume that a loan of \$1,000 is made at an annual interest rate of 10 percent. The \$1,000 used to make the loan is money held now; it represents a present value (PV). If the loan is repaid after one year, the repayment amount is \$1,100 of which \$1,000 is principal and \$100 is interest. This \$1,100 to be received one year from now represents a future value (FV). Letting the subscript indicate the number of years until repayment, and "i" represent the interest rate, this relationship can be expressed as:

$$FV_1 = PV(1+i).$$

Substituting our assumed values for PV and i yields:

$$\begin{aligned} FV_1 &= \$1,000(1+0.1) \\ &= \$1,000(1.1) \\ &= \$1,100. \end{aligned}$$

If, instead of receiving repayment at the end of one year, the loan is renewed for a second year, its future value at the end of two years is \$1,210. The interest received for the second year of the loan is \$110, or \$10 more than the interest accrued during the first year. This represents interest accrued on both the \$1,000 principal amount and the \$100 interest accrued in the first year. The calculation is as follows:

$$\begin{aligned} FV_2 &= FV_1(1+i) \\ &= \$1,100(1+0.1) \\ &= \$1,210. \end{aligned}$$

Since  $FV_1$  is  $PV(1+i)$ , substitution reveals that:

$$\begin{aligned} FV_2 &= PV(1+i)(1+i) \\ &= \$1,000(1+0.1)^2 \\ &= \$1,000(1.1)^2 \\ &= \$1,000(1.21) \\ &= \$1,210. \end{aligned}$$

Extending and generalizing this pattern leads to the following expression as the formula for calculation of future value for  $n$  years.

$$FV_n = PV(1+i)^n.$$

Discounting is the opposite of compounding. Compounding is the process of converting present values to future values, discounting, on the other hand, is the process of converting future values to present values. The present value of a given future amount to be received at a specific future date is equal to the present amount that would accumulate to that future amount by that date given a particular interest rate. For example, the present value of \$1,210 to be received two years from now is \$1,000 if the interest rate is 10 percent. The formula for calculation of present value (for the end-of-year convention) can easily be derived from the formula for future value calculation. Since

$$FV_n = PV(1+i)^n,$$

it follows that

$$PV = (FV_n)(1/(1+i)^n)$$

The interest rate ( $i$ ) in this formulation is known as the "discount rate". Current DOD policy requires a 10 percent discount rate for EAs. The ratio  $(1/(1+i)^n)$  is called the "discount factor."

## 2.1 INFLATION AND DIFFERENTIAL INFLATION

The term "inflation" refers to a general rise in the price level in an economy. Using a 10% discount rate, if the expected inflation rate is judged to affect all costs of an EA equally, special treatment is not necessary. However, if certain types of costs are expected to experience a substantially different rate of inflation than the general economy, ECONPACK has the capability to handle this situation with the differential inflation feature. Specifically, the user can apply a

differential inflation factor to any expense item in the EA. Since the concept is "differential" inflation, the user would use a percentage factor representing the difference between the expected rate of inflation for the particular expense item and the expected general rate of inflation.

#### 2.1.1 Constant Dollar Analysis

An EA is usually performed with all costs reflective of a particular baseline year. In this case, the EA is termed a "Constant Dollar Analysis". The 10% discount rate applies in the case of constant dollar analysis in accordance with policy (OMB A-94, AR 11-28, and AR 415-15).

#### 2.1.2 Current Dollar Analysis

Current Dollar Analysis in accordance with OMB A-104 requires that the full amount of inflation be applied to every cost. The discount rate for this type of analysis is based on the cost of U.S. Treasury Securities with a maturity comparable to the term of the lease. Inflation indices and discount rate information can be obtained from the OCE Economic Briefs in the ECONPACK module of the PAX System or by contacting HQDA(CEEC-PESO).

### 2.2 ASSET VALUE OVER TIME

Most assets do not retain their full value over time because of physical deterioration and/or obsolescence. The estimated value of an asset at a future point in time may be entered in two ways: utilizing a residual schedule or stating a salvage value.

#### 2.2.1 Residual Schedule Method

The user may choose from among three "sub-options" if electing to employ the residual schedule concept instead of the salvage value concept: the straight-line depreciation schedule (SL), the amortization declining balance schedule (DB), or a user specified schedule (US). The last schedule would be prepared based on the user's judgement of asset value erosion for the particular type of asset. The residual value of an asset at the end of the project's life is often referred to as "terminal value".

#### 2.2.2 Salvage Value

A second way is by stating a user specified salvage value (also referred to as a "terminal value"). Normally, a salvage value is a nominal sum at which an asset is valued at the end of the project's life.

## CHAPTER 3 TECHNICAL INFORMATION

### 3.0 TECHNICAL INFORMATION

3.1 Introduction: The purpose of this chapter is to explain some of the features of ECONPACK, provide more detailed interpretations of selected EA concepts, and explain key procedures for using ECONPACK.

3.2 Input Files and Report Files: The ECONPACK permanent disk contains two kinds of files: input files and report files. Input files are fully or partially constructed data bases. When the data from an input file is used to generate economic analysis reports, a correlative report file is created. The filetypes for input files and report files are FT75F001 and FT76F001, respectively. These filetypes are assigned by the system.

3.3 ECONPACK User Modes: The user may prepare an ECONPACK input file in either of two ways: the input file may be entered by means of a terminal prompting mode or by means of a file input mode, utilizing text editor commands. [Text editor commands are explained in Chapter 4.]

3.3.1 Terminal Prompting Mode: Use of this mode requires little knowledge of the computer system and relatively limited expertise in economic analysis. It is, therefore, especially appropriate for the standard user. Since the structures employed in the two modes are similar, it is useful, when beginning to perform EAs using ECONPACK, to become familiar with the terminal prompting mode even if the user expects ultimately to use the file input mode.

The terminal prompting mode is interactive. Creating or modifying an input file is accomplished by responding to a series of prompts. This prompting sequence leads the user, step-by-step, until the input file is created or modified and the reports are ready for generation.

Chapter 6 discusses the terminal prompting mode.

3.3.2 File Input Mode: The file input mode is a less rigidly structured means of creating and modifying input files on ECONPACK. This less rigid structure has a significant advantage in that it allows greater user flexibility than is possible with the terminal prompting mode. On the other hand, the file input mode has the disadvantage of requiring substantially greater knowledge of the computer system and of the economic analysis process since the user is not explicitly directed through the input procedure.

Chapter 7 discusses the file input mode.

3.4 Types of Prompts: Throughout this manual, reference is made to various types of prompts. Specifically, users may encounter any or all of the prompts listed below:

1. PAX prompt (PAX>) -- enter an option from the PAX System Menu;
2. Time-of-Day prompt (hh:mm:ss>) -- enter a Time-of-Day command. Time-of-Day commands are discussed in Chapter 4. Time-of-Day prompts appear when the user is within the DD Form 1391 Processor System;
3. C prompt (C>) -- enter a CMS (Conversational Monitoring System) command. CMS commands are discussed in Chapter 4. CMS is available only to non-DD Form 1391 Processor System users, and appears as Option 8 on your MAIN ECONPACK MENU;
4. Monitor Ready prompt (MONITOR READY>) -- enter a monitor ready command. Monitor ready commands are discussed in Chapter 4. Monitor ready commands are available when the user enters the DD 1391 Processor;
5. E prompt (E>) -- enter a text editor command. Text editor commands are discussed in Chapter 4;
6. I prompt (I>) -- enter input data;
7. ?? prompt (??>) -- enter KT <CR> to halt report generation or <CR> to continue execution of ECONPACK. This prompt appears when the user depresses the ESCAPE key at any prompt during the program;
8. System prompt (for example, PLEASE LOG IN:) -- enter an appropriate response, as explained in this manual.

3.5 Types of ECONPACK Users: ECONPACK users are of two types: users who are also users of the DD Form 1391 Processor System and users who are not users of the DD Form 1391 Processor System. The way in which ECONPACK is accessed depends upon which category applies to a particular user.

DD Form 1391 Processor System users access ECONPACK in one of two ways:

1. Enter the number corresponding to ECONPACK at the PAX System Menu; or
2. Enter ECONPACK <CR> at a Time-of-Day prompt within the DD Form 1391 Processor System.



Non-DD Form 1391 Processor System users have only one option: i.e., enter the number corresponding to ECONPACK at the PAX System Menu. These procedures are displayed on pages 3-11 through 3-13 of this manual.

In this manual, most examples are written as though the ECONPACK user is also a DD Form 1391 Processor System user. However, it should be noted that procedures for using ECONPACK are exactly the same, whether the user of ECONPACK is a user of the DD Form 1391 Processor System or not.

**3.6 File Space:** Each user is allotted a fixed amount of disk storage space. The report file from several analyses will consume much of this space. Also, a certain amount of disk space is temporarily required during input file creation and report generation. The user may ascertain available disk space in two ways:

- A. This information will be made available almost immediately after choosing the ECONPACK option from the PAX System Menu, as illustrated below:

EXAMPLE:

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

```
PAX>1 <CR>
PROJECT PAX
CONNECT=      00:01:10  TRU=      7.04  TIO=      1,834
----> 53% OF DISK SPACE AVAILABLE
```

[Note: The DISK SPACE AVAILABLE notation is also displayed when a user selects the option number corresponding to the DD Form 1391 Processor System from the PAX System Menu.]

- B. Type QUERY DISK A <CR> or Q DISK A <CR> at a Time-of-Day prompt or at a C prompt.

[If user is at a C prompt or the Time-of-Day prompt and wishes to go to the PAX System Menu, LOG <CR> should be entered; if user wishes to access ECONPACK, ECONPACK <CR> should be entered.]

EXAMPLE:

10:10:10>QUERY DISK A <CR>

LABEL	CUU	M	STAT	BLKSIZE	FILES	BLKS USED-(%)	BLKS LEFT	BLK TOTAL
BIRD 302 A	R/W	1024		39		983-47	1107	2090

^  
:

[This message states that the user has used 47 percent of total disk space (or that 53 percent of total disk space is available).]

When users have less than 20 percent of their disk space available, ECONPACK prints the following message, notifying them of their status and giving them the opportunity of increasing their storage space:

NOTICE: YOUR APPLICATION DISK IS MORE THAN 80% FULL. THIS IS DANGEROUSLY HIGH. DEPENDING ON YOUR UPCOMING FILE-SAVING ACTIVITIES - YOU MAY WANT TO:

- 1) DO NOTHING - ONLY IF YOU HAVE AMPLE SPACE FOR YOUR WORK (NOT RECOMMENDED)
- 2) FREE UP AVAILABLE STORAGE - YOU CAN ERASE FILES THAT ARE NO LONGER NECESSARY
- 3) INCREASE YOUR STORAGE A SET NUMBER OF CYLINDERS - SEND A PAXMAIL TO V3MCP1 INDICATING YOUR APPLICATION AND CYLINDERS TO BE ADDED (PROCESSED IN 48 HOURS)
- 4) INCREASE YOUR PRESENT STORAGE BY 20% - ANSWER THE PROMPT TYPED BELOW AND YOUR STORAGE IS AUTOMATICALLY INCREASED WITHIN 24 HOURS (MIN. INCREASE = 1 CYL)

DO YOU WANT YOUR STORAGE AUTOMATICALLY INCREASED BY 20% (YES/NO)  
= >> \_\_\_\_\_

3.7 Negative Inputs: The user may be required to use negative inputs on at least three occasions:

1. Normally an expense item is a cost. However, if the user desires to show a positive cash flow for a particular alternative, the minus (-) sign may be used to enter that expense item as a negative value. Negative expense items should be avoided in performing a sensitivity analysis.
2. The terminal prompting routine will ask if each alternative has a salvage value (also known as a terminal value). Usually a salvage value is a positive number, indicating a nominal sum at which an asset is valued. However, if an expenditure of funds would be required to remove an alternative, the user may reflect this fact by stating the salvage value in negative terms. (For example, demolition costs are expressed as negative numbers.)

3. If an inflation rate for an expense item is expected to be less than the inflation rate expected for the general economy, the differential inflation values should be entered as negative numbers.

**3.8 Entering Maintenance and Repair Costs:** Normally, certain costs must be incurred on a periodic basis to keep a facility usable (maintenance costs) or to refurbish a facility (repair costs). It is important to correctly state the timing of the costs for a consistent and correct EA.

To illustrate, assume an alternative calls for constructing a facility with a 25-year economic life. Further, assume that it will take 3 years to construct the building. Thus, the period of analysis is 28 years.

Assuming maintenance costs of \$50,000 a year are expected, the correct data entry would be three years of no cost followed by 25 years of \$50,000/year costs. (No maintenance costs would be incurred during the three-year construction phase.)

Assuming the analyst predicts that a new roof costing \$50,000 will be needed in Year 10 of the economic life, the correct data entry for the repair cost would be to show no costs during the first 12 years of the period of analysis, a \$50,000 cost in the 13th year, and 15 more years of zero repair costs.

**3.9 Warnings:** If using the terminal prompting mode, single quotes should not be used in any input as it will cause major errors in the analysis routine.

Commas or dollar signs should not be used when where entering cost data.

If the user supplies an input filename which is the same as an input filename which already exists, ECONPACK informs the user that that file already exists and that continuing will erase the contents of the file. ECONPACK then asks if the user wishes to continue.

EXAMPLE:

PLEASE ENTER YOUR INPUT FILE NAME >TEST <CR>

**\*\*FILE, TEST, ALREADY EXISTS\*\***

(CONTINUING WILL ERASE THE CURRENT CONTENTS OF THE FILE)

EXAMPLE (Continued)

DO YOU WISH TO CONTINUE (Y OR N) >N <CR>

PLEASE ENTER YOUR INPUT FILE NAME >[Enter a new input filename.]

Of course, if the user wanted to erase the contents of the current input file in the example above, Y <CR> would be the proper response to the question, "Do you wish to continue?"

3.10 Limits on Files Created: The following limits apply to ECONPACK input files:

Maximum Number of Alternatives	20
Maximum Number of Expense Items	
(Costs) per Alternative	20
Maximum Number of Inflation Indexes	10
Maximum Number of Residual Schedules	10
Maximum Number of Alternatives	
to be Graphed (per graph)	6
Maximum Number of Graphs	4
Maximum Number of Sensitivity Analyses	30
Maximum Percent Change in Sensitivity	200
Analysis	

3.11 Procedures For Using ECONPACK: The procedures presented in this section provide instructions for using ECONPACK. The specific procedures explained are:

- I. Logging on to the PAX System and ECONPACK
- II. Logging off ECONPACK and the PAX System
- III. Selecting an Edit Choice
- IV. Verifying an Edit Choice
- V. Changing an Edit Choice
- VI. Selecting a Display Choice
- VII. Verifying a Display Choice
- VIII. Changing a Display Choice

NOTES:

1. In all procedure sections, data to be entered by the user is underlined.

2. **ESCAPE KEY:** Once report generation begins, the user should not stop the generation unless something is obviously wrong. If a need to stop the report generation arises, users should depress the ESCAPE key once. The system should respond with a ?? prompt. At the ?? prompt, KT <CR> should be entered to halt report generation. The user will then receive another prompt at which an option from the MAIN ECONPACK MENU should be entered.
3. **ASSISTANCE FOR ECONPACK:** If a problem is encountered in running ECONPACK or in understanding what the program wants for input and the user has tried the /HELP command and has reviewed this manual, the user should contact Huntsville Division - ECONPACK Computer Assistance -- AV 742-5266, COM (205) 895-5266, or PAX User ID, BIRD.
4. **ASSISTANCE FOR EQUIPMENT:** If assistance is needed with equipment interface, users should call the Equipment Hotline -- 1-800-428-HELP.
5. **ASSISTANCE FOR ACQUIRING TYMCOMM COMMUNICATIONS:** If a problem is encountered in acquiring TYMCOMM, users should call Mike Rice at AV 285-0578 or COM (202) 272-0578.
6. **ASSISTANCE FOR THE PAX SYSTEM:** If assistance is needed for the PAX System, users should call the McDonnell Douglas Information Systems Group 24-Hour Hotline Toll-Free number: 1-800-331-1497.

I. Logging on to the PAX System and ECONPACK

STEP 1: ESTABLISH TELEPHONE COMMUNICATION WITH THE COMPUTER.

The user must first establish telephone communication with the computer. This step is accomplished in various ways, dependent upon the type of equipment being used as well as how that equipment has been set up. Some users may simply have to turn the equipment on, depress a specified key on the keyboard, and the communications line will be accessed automatically. Others may have to dial the assigned telephone number, listen for a high-pitched sound, and then insert the telephone receiver into the terminal's coupler or release a specified button on the equipment's modem.

Once the appropriate steps have been followed, the system will quickly prompt the user to enter a "terminal identifier." To prompt the user, the system will either display a string of random characters or actually print the words "PLEASE TYPE YOUR TERMINAL IDENTIFIER." The user should respond by entering the appropriate terminal identifier. A terminal identifier indicates to the computer the type of equipment required to communicate with the user's terminal. If the wrong identifier is entered, telephone communication will probably be terminated. [See Appendix B for a list of appropriate terminal identifiers for various types of equipment.]

EXAMPLE:

Establish communications line.

PLEASE TYPE YOUR TERMINAL IDENTIFIER A  
-3122-007-

STEP 2: LOG ON TO THE PAX SYSTEM.

Once the terminal identifier has been entered, the system will prompt you for the System User ID and System Password assigned the user's activity. These two words identify the user, the programs that user may access, and the activity to be billed for the session. [If the correct System User ID and Password are not entered within 2 1/2 minutes after the user establishes telephone communication, the computer will automatically disconnect.] The system then prompts for a "project code." The user should enter his/her initials. The system then responds by printing the date and time the user logged on to the computer.

Once logged on to the computer, the user has immediate access to the PAX System. The system indicates the PAXMAIL status for the System User ID. [PAXMAIL is a feature of the PAX System which allows PAX users to send messages to each other's ID.] The system then responds with log-on messages which provide a variety of urgent information. Following the log-on messages is a display of the PAX System Menu, in which the system lists the components of the PAX System available to the user. The number of components available to each System User ID will vary. The system then prompts the user to make a selection.



PASSWORD: [Enter your System Password.] <CR>  
PROJECT CODE: [Enter your initials.] <CR>

\*\*\*\*\*  
PAXMAIL STATUS: NO MAIL WAITING  
\*\*\*\*\*



STEP 3: LOG ON TO ECONPACK.

- A. Non-DD Form 1391 Processor System users always access ECONPACK directly from the PAX System Menu by selecting the option corresponding to ECONPACK from the PAX System Menu. The system displays PROJECT PAX, the amount of clock time and computer time used in the PAX System, the percentage of storage space available on the user's ECONPACK permanent disk, the line editor type and display type, welcomes the user to ECONPACK, displays ECONPACK log-on messages, and displays the MAIN ECONPACK MENU. [The line editor feature and display type feature are discussed on page \_\_\_\_.]

EXAMPLE:

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. PRINT PAX NEWSLETTER
4. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 4 OR LOG

PAX>1 <CR>

PROJECT PAX

CONNECT= 00:00:15 TRU= 2.77 TIO= 350  
89% OF DISK SPACE AVAILABLE

LINE EDITOR TYPE IS IBM; TERMINAL DISPLAY TYPE IS LINE  
\*\*\* WELCOME TO THE ECONPACK SYSTEM!  
\*\*\* VERSION 3.1 (14 JULY 1987)

USERS MAY USE A /QUIT OR A /HELP COMMAND AT ANY PROMPT DURING THE PROMPTING SEQUENCE.

OCE ECONOMIC BRIEFS WILL BE UPDATED MONTHLY BY THE OCE MILCON MANAGEMENT OFFICE. THIS ECONOMIC ANALYSIS NEWSLETTER WILL PROVIDE CURRENT INFORMATION ON DISCOUNT RATES, INFLATION RATES, AND GENERAL NEWS ITEMS.

FOR INFORMATION ABOUT SYSTEM CHANGES AND UPDATES, SEE THE ECONNEWS FEATURE WITHIN THE ECONPACK HELP FACILITY.

PLEASE HIT CARRIAGE RETURN TO CONTINUE

><CR>



EXAMPLE: (Continued)

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

ENTER DESIRED OPTION>\_\_\_\_\_

- B. DD Form 1391 Processor System users have two ways to access ECONPACK: directly from the PAX System Menu or from within the DD Form 1391 Processor System.
1. Users accessing ECONPACK directly from the PAX System Menu should perform the following operations:
    - A. Enter the number corresponding to ECONPACK at the PAX System Menu.

EXAMPLE:

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

PAX>1 <CR>

PROJECT PAX

CONNECT= 00:02:45 TRU= 33.22 TIO=  
3,778

83% OF DISK SPACE AVAILABLE

LINE EDITOR TYPE IS QED; TERMINAL  
DISPLAY TYPE IS LINE

\*\*\* WELCOME TO THE ECONPACK SYSTEM:  
\*\*\* VERSION 3.1 (14 JULY 1987)

- B. Enter your DD Form 1391 Processor System IDENT word when prompted for identification.

EXAMPLE:

IDENTIFICATION: >[Enter your IDENT word.]

YOU HAVE JUST ENTERED ECONPACK AS:

---

USERS MAY USE A /QUIT OR A /HELP COMMAND AT ANY PROMPT DURING THE PROMPTING SEQUENCE.

OCE ECONOMIC BRIEFS WILL BE UPDATED MONTHLY BY THE OCE MILCON MANAGEMENT OFFICE. THIS ECONOMIC ANALYSIS NEWSLETTER WILL PROVIDE CURRENT INFORMATION ON DISCOUNT RATES, INFLATION RATES, AND GENERAL NEWS ITEMS.

FOR INFORMATION ABOUT SYSTEM CHANGES AND UPDATES, SEE THE ECONNEWS FEATURE WITHIN THE ECONPACK HELP FACILITY.

PLEASE HIT CARRIAGE RETURN TO CONTINUE  
><CR>

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTION>\_\_\_\_\_

2. Users accessing ECONPACK from within the DD Form 1391 Processor System should perform the following operations:

- A. Enter ECONPACK <CR> at the Time-of-Day prompt.

EXAMPLE:

08:18:53>ECONPACK <CR>  
ALREADY MONITORING PROCESS.

\*\*\* WELCOME TO THE ECONPACK SYSTEM!  
\*\*\* VERSION 3.1 (14 JULY 1987)

- B. Enter your Processor IDENT word when prompted for identification.

EXAMPLE:

IDENTIFICATION: >[Enter your IDENT word.]  
<CR>

YOU HAVE JUST ENTERED ECONPACK AS:

---

The system then displays the ECONPACK log-on messages and the MAIN ECONPACK MENU.

EXAMPLE:

USERS MAY USE A /QUIT OR A /HELP COMMAND AT ANY PROMPT DURING THE PROMPTING SEQUENCE.

OCE ECONOMIC BRIEFS WILL BE UPDATED MONTHLY BY THE OCE MILCON MANAGEMENT OFFICE. THIS ECONOMIC ANALYSIS NEWSLETTER WILL PROVIDE CURRENT INFORMATION ON DISCOUNT RATES, INFLATION RATES, AND GENERAL NEWS ITEMS.

FOR INFORMATION ABOUT SYSTEM CHANGES AND UPDATES, SEE THE ECONNEWS FEATURE WITHIN THE ECONPACK HELP FACILITY.

PLEASE HIT CARRIAGE RETURN TO CONTINUE  
><CR>

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTION>\_\_\_\_\_

II. Logging off ECONPACK and the PAX System.

- A. If the user is a non-DD Form 1391 Processor System user, the following remarks apply:

Assuming the user is at the MAIN ECONPACK MENU, select Option 9, Exit to PAX Menu. At the PAX prompt, enter LOG <CR>. When the system responds with the prompt, PLEASE LOG IN:, terminate the communications connection.

EXAMPLE:

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

ENTER DESIRED OPTION>9 <CR>

\*\*\* LEAVING ECONPACK \*\*\*

CON FILE 6471 TO BOBIN COPY 001 NOHOLD  
PROJECT ECON

CONNECT= 00:01:33 TRU= 12.59 TIO= 1,808

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. PRINT PAX NEWSLETTER
4. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 4 OR LOG

PAX>LOG <CR>

PROJECT PAX

CONNECT= 00:00:14 TRU= 2.32 TIO= 362

LOGOFF AT 11:58:08 CDT WEDNESDAY 09/28/87

PLEASE LOG IN: [Terminate communications connection.]

If the user is at a C prompt, LOG <CR> should be entered. The system will return the user to the PAX System Menu. At the PAX prompt, LOG <CR> should be entered. When the system responds with the prompt, PLEASE LOG IN:, the communications connection should be terminated.

EXAMPLE:

C>LOG <CR>

\*\*\*LEAVING ECONPACK \*\*\*

PROJECT ECON

CONNECT= 00:00:13 TRU= 2.33 TIO= 362

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. PRINT PAX NEWSLETTER
4. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 4 OR LOG

PAX>LOG <CR>

PROJECT PAX

CONNECT= 00:00:13 TRU= 2.49 TIO= 362

LOGOFF AT 20:16:54 CDT FRIDAY 10/07/87

PLEASE LOG IN: [Terminate communications connection.]

- B. For DD Form 1391 Processor System users, the log-off procedure used depends upon the way in which ECONPACK was accessed.
1. If ECONPACK was accessed directly from the PAX System Menu, users should enter Option 8 at the MAIN ECONPACK MENU, respond to the question regarding the Huntsville Division Bulletin, enter LOG <CR> at the Time-of-Day prompt, enter LOG <CR> at the PAX prompt, and terminate the communications connection.

EXAMPLE:

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTION>8 <CR>

\*\*\* LEAVING ECONPACK \*\*\*

WOULD YOU LIKE TO READ HUNTSVILLE DIV. BULLETINS  
LAST UPDATED:

DATE: 10/16/87

TIME: 08:50

(Y/N)>N <CR>

TYPE HELP FOR AN EXPLANATION OF THE COMMANDS  
AVAILABLE TO YOU.

12:26:13>LOG <CR>

RUN FILE 9533 TO TRACK3 COPY 001 NOHOLD  
PROJECT 1391  
CONNECT= 00:01:51 TRU= 29.76 TIO=  
2,299

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

PAX>LOG <CR>

CONNECT = 00:00:14 TRU= 2.34 TIO= 362  
LOGOFF AT 12:29:10 CDT THURSDAY 10/22/87

PLEASE LOG IN: [Terminate communications  
connection.]

2. If the user accessed ECONPACK from within the DD Form 1391 Processor System, the following comments are appropriate:

Choose Option 8 from the MAIN ECONPACK MENU, enter LOG <CR> at the Time-of-Day prompt, enter LOG <CR> at the PAX prompt, and terminate the communications connection.

EXAMPLE:

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTION>8 <CR>

\*\*\* LEAVING ECONPACK \*\*\*

12:02:09>LOG <CR>  
RUN FILE 6506 TO TRACK3 COPY 001 NOHOLD  
PROJECT 1391  
CONNECT= 00:01:58 TRU= 28.45 TIO= 2,186

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

PAX>LOG <CR>  
PROJECT PAX  
CONNECT = 00:00:14 TRU 2.39 TIO= 362  
LOGOFF AT 12:02:37 CDT FRIDAY 09/28/87

PLEASE LOG IN: [Terminate communications connection.]

III. Selecting An Edit Mode. ECONPACK users may edit input before depressing the CARRIAGE RETURN key by using one of two available edit modes: QED or IBM. The first time a user logs on to the ECONPACK System or DD 1391 Processor System, the message below is displayed:

THIS MESSAGE, WHICH WILL APPEAR ONLY ONCE, PROVIDES YOU THE OPPORTUNITY TO SELECT YOUR PREFERENCE OF EDIT MODES FOR THE ECONOMIC ANALYSIS PACKAGE SYSTEM. YOUR SELECTION WILL AUTOMATICALLY REMAIN IN EFFECT FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. YOU MAY CHANGE EDIT MODES AT A LATER TIME BY TYPING A NEW SELECTION (IBM or QED) AT THE TIME-OF-DAY> OR C>.

EXAMPLE:

- (1) QED EDITOR = CONTROL A - FOR CHARACTER DELETION  
                  = CONTROL W - FOR WORD DELETION  
                  = CONTROL Q - FOR LINE DELETION  
                  = CONTROL R - FOR PRINTING REVISED LINE  
                                BEFORE ENTERING A CARRIAGE  
                                RETURN
- (2) IBM EDITOR = @ - FOR CHARACTER DELETION  
                  = [ - FOR LINE DELETION

ENTER NUMBER OF CHOICE> \_\_\_\_\_

If the user enters 1 <CR>, the system prints the following response:

THE QED EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE IBM EDIT MODE AT ANY TIME BY TYPING "IBM" AT THE TIME-OF-DAY> OR C>.

If the user enters 2 <CR>, the system prints this response:

THE IBM EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE QED EDIT MODE AT ANY TIME BY TYPING "QED" AT THE TIME-OF-DAY> OR C>.

Users should decide whether to use the IBM edit mode or the QED edit mode and enter 1 <CR> or 2 <CR> at the ENTER NUMBER CHOICE prompt. The system then welcomes the user to ECONPACK and displays the MAIN ECONPACK MENU.



#### IV. Verifying An Edit Mode

TASK 1: USE PROCEDURE I AND LOG ON TO THE PAX SYSTEM.

TASK 2: VERIFY AN EDIT MODE.

An edit mode may be checked or verified at the Time-of-Day> or C>. The IBM or QED edit mode is controlled on the system by a permanent disk file with the filename filetype, EDIT CHOICE. The Time-of-Day/CMS command, TYPE, may be used to verify the file content.

EXAMPLE:

08:15:59>TYPE EDIT CHOICE <CR>

If the user's edit mode is IBM, the system responds:

IBM

If the user's edit mode is QED, the system responds:

QED

The system then returns the user to a Time-of-Day prompt or C prompt.

#### V. Changing An Edit Mode

TASK 1: USE PROCEDURE I AND LOG ON TO THE PAX SYSTEM.

TASK 2: CHANGE YOUR EDIT MODE.

An edit mode may be changed at the Time-of-Day> or C>. To change from the IBM edit mode to QED, simply type QED <CR> at the Time-of-Day> or C>. To change from the QED edit mode to IBM, simply type IBM <CR> at the Time-of-Day> or C>.

If a user is using QED and types IBM at the Time-of-Day> or C>, the system responds as follows:

08:15:59>IBM <CR>

THE IBM EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE QED EDIT MODE AT ANY TIME BY TYPING "QED" AT THE THE TIME-OF-DAY> OR C>.

THE FOLLOWING COMMANDS ARE APPLICABLE IN THIS MODE:

1. @ = DELETES A CHARACTER.
2. [ = DELETES THE ENTIRE LINE.

The user is then returned to the Time-of-Day> or C>.

If a user is using IBM, and types QED at the Time-of-Day> or C>, the system responds as follows:

10:10:10>QED <CR>

THE QED EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE IBM EDIT MODE AT ANY TIME BY TYPING "IBM" AT THE TIME-OF-DAY> OR C>.

THE FOLLOWING COMMANDS ARE APPLICABLE IN THIS MODE:

1. CONTROL A = FOR CHARACTER DELETION
2. CONTROL W = FOR WORD DELETION
3. CONTROL Q = FOR LINE DELETION
4. CONTROL R = FOR PRINTING REVISED LINE BEFORE ENTERING A CARRIAGE RETURN.

The user is then returned to the Time-of-Day> or C>.

- VI. Selecting a Display Choice. ECONPACK users must select one of three terminal types: Tymcomm, VT100, or line. Users should consult their communications package manual to determine the proper choice. To select a terminal choice, users simply enter the command, DISPLAY, followed by one of the three choices, followed by a <CR> at the Time-of-Day> or C>.

EXAMPLE:

10:10:10>DISPLAY [Enter your choice.] <CR>  
Computer's Response:

ALREADY MONITORING PROCESS  
10:10:12>\_\_\_\_\_

- VII. Verifying a Display Choice. To verify a display choice, users enter the command, TYPE, followed by the words, DISPLAY CHOICE, followed by a <CR> at the Time-of-Day> or C>.

EXAMPLE:

10:10:10>TYPE DISPLAY CHOICE <CR>  
Computer's Response:

LINE  
10:10:12>\_\_\_\_\_

VIII. Changing an Edit Display Choice. To change a display choice, users simply follow the procedure outlined in Section VI above. That is, type the command, DISPLAY, followed by the new choice, followed by a <CR>, at the Time-of-Day> or C>.

EXAMPLE:

20:40:59>DISPLAY VT100 <CR>

Computer's Response:

ALREADY MONITORING PROCESS.

20:41:00>\_\_\_\_\_

3.12 PC-ECONPACK: Two versions of ECONPACK are now available: the mainframe application (which is the subject of this manual) and the personal computer application, available on diskettes. The PC-ECONPACK version includes the capability to upload/download files to/from the mainframe ECONPACK system. This interchange capability enables analysts to develop EAs on PC-ECONPACK off-line and upload the EA input file to the mainframe for transmission to a DD1391 Form. Users may consult Appendix F for instructions on interfacing PC-ECONPACK with the PAX Mainframe System.

CHAPTER 4  
COMMANDS AVAILABLE FOR ECONPACK USERS

4.0 COMMANDS AVAILABLE FOR ECONPACK USERS

4.1 Introduction: ECONPACK users have many commands available for their use in creating files, modifying files, and manipulating the system. The purpose of this chapter is to identify the available commands and explain their use. Four types of commands are discussed: text editor commands, Time-of-Day/CMS commands, monitor ready commands, and general commands.

4.2 Text Editor Commands: Text editor commands may be used to create files or modify existing files which are currently being edited. A quick reference guide to text editor commands available for ECONPACK users is provided in this section. Complete instructions may be found in the DD FORM 1391 PROCESSOR SYSTEM USERS MANUAL.

QUICK REFERENCE GUIDE  
TEXT EDITOR COMMANDS

Note: [ ] indicates optional parameters.  
/ indicates a delimiter that sets off a string of characters.  
\* indicates the current line and all lines below will be affected by the command.  
- underlined letters indicate the shortened version of a text editor command.

UPPERCASE LETTERS - Indicate exact words or abbreviated form must be entered.

LOWERCASE LETTERS - Indicate parameters entered in the command format.

COMMAND	FUNCTION
1. <u>BOTTOM</u>	Positions the line pointer at the last line of text.
2. CASE M	Allows the user to use both uppercase and lowercase letters when entering and/or editing files identified by filetypes other than MEMO. (Optional) This should be used with filetype, FT75F001 (input file).

QUICK REFERENCE GUIDE  
TEXT EDITOR COMMANDS  
(Continued)

COMMAND	FUNCTION
3. <u>C</u> HANGE/old string/new string/[lines[*]] *	Changes a character string in one or more lines.
4. <u>D</u> ELETE [lines] *	Begins with the current line and deletes the specified number of lines.
5. <u>D</u> OWN [lines]	Advances the line pointer the specified number of lines.
6. <u>F</u> ILE	Saves the current file and returns to the CMS/Time-of-Day prompt.
7. <u>G</u> ETFILE filename filetype	Inserts the contents of the specified file into the current file beginning at the current line.
8. <u>G</u> OTO linenumber	Moves the line pointer to the line.
9. <u>I</u> NPUT [new line]	Causes the system to enter the input mode so one or more lines can be entered after the current line. To exit the input mode, enter <CR> at an I prompt. The line pointer is positioned at the last line entered. If user types <u>I</u> NPUT and enters a line of data, the system adds the line to the temporary copy and returns to an I>. If user is entering only one line of text, the user may wish to enter <u>I</u> NPUT and text. The system will return to an E>.
10. <u>L</u> OCATE /string/	Searches down the temporary file for the specified string and moves the line pointer to the line containing the first occurrence of that string. Users may want to be at the top of the file before executing this command.

QUICK REFERENCE GUIDE  
TEXT EDITOR COMMANDS  
(Continued)

COMMAND	FUNCTION
11. <u>N</u> EXT [lines]	Advances the line pointer the specified number of lines.
12. <u>P</u> UTFILE filename filetype A [lines] *	Copies a range of lines to the specified permanent disk file. The lines copied will start with the current line. If the specified permanent disk file already exists, the lines will be added to the end of that file.
13. <u>Q</u> UIT	Returns the system to the C>/Time-of Day> without saving the temporary file or exits the text information block without saving the file and continues with the prompting sequence.
14. <u>R</u> EPLACE new line	Deletes the current line and replaces it with the specified new line. The line pointer is positioned at the last line entered.
15. <u>T</u> ABSET position list	Allows the user to specify tabulation stops. [Users should consult the DD FORM 1391 PROCESSOR SYSTEM USERS MANNUAL for more information of using the TABSET command.]
16. <u>T</u> OP	Moves the line pointer to TOF:, the imaginary line above the first line of text.
17. <u>T</u> YPE [lines] *	Beginning with the current line, the system prints the specified number of lines and moves the line pointer to the last line printed. If no number is specified, only the current line is printed.

QUICK REFERENCE GUIDE  
TEXT EDITOR COMMANDS  
(Continued)

COMMAND	FUNCTION
18. UP [lines] *	Moves the line pointer up the specified number of lines from the current line (if a number is specified) or searches up for the specified string of characters and moves the line pointer to the line containing the first occurrence of that string (if a string of characters is specified.)
19. <u>VERIFY</u>	Controls the printing of a current line after various text editor commands are issued.
20. <u>WHERE</u>	Prints the current line number.
21. <u>ZONE</u> [position1 position2]	Establishes a portion of the data line to be scanned and/or updated by LOCATE, CHANGE, and UP commands. The two position numbers specify the first and last column positions. Omitting the optional parameters displays the current zone settings.
22. \$FROMPC	Using Tymcomm, this command allows users to copy files from the PC to the PAX System.

[Note: See the DD FORM 1391 PROCESSOR USERS MANUAL for procedures on entering text. These commands can be used to edit files on the user's ECONPACK permanent disk and the DD Form 1391 Processor permanent disk.]

4.3 CMS/Time-of-Day Commands: For non-DD Form 1391 Processor System users, Option 8 on the MAIN ECONPACK MENU is CMS. If the user selects this option, several commands are available which allow the user greater flexibility in creating input files, editing existing files, etc. These commands are also valid at the Time-of-Day prompt in the DD Form 1391 Processor System. In this section, the CMS/Time-of-Day commands are presented. A Quick Reference Guide is provided which gives users the name, general function, and page number of the detailed description of each command. Beginning on page 4-10, a detailed description is presented for each command. The presentation of each command is divided into six major sections, as Figure 4-1 illustrates.

Figure 4.1. Presentation of CMS/Time-of-Day Command

```

1.  CMS/TIME-OF-DAY COMMAND
    _____
2.  QUERY
    _____

3.  FORMAT:      QUERY (Keyword)

4.  PARAMETERS:  KEYWORD:  NAMES
                   Specific System User ID
                   TIME
                   TRU
                   USERS
                   DISK

5.  NOTES:       NONE.

6.  VARIATION A:  QUERY NAMES
    _____

    FUNCTION:     System prints a list of all System User IDs
                  currently logged on to the PAX System.
    _____

    EXAMPLE:

    Command issued: 10:10:10>QUERY NAMES <CR>

    Computer's response:

    CAP006  -EF1,  FRED  -DE8,  V3MCC  -DED,  LACEE  -DSC
    MAURICE -DSC,  SHARP5 -EE6,  BIRD   -333,  NELSON -DEA
    CAPSINK -DSC,  V3NAF -DF8,  DARWIN -DF3,  CHUCK2N -EF4

    SUMMARY:      The system printed a list of all System
                  User IDs currently logged on to the PAX
                  System.

    VARIATION B:  QUERY (specific System User ID.)
    _____

    FUNCTION:     System verifies whether the specified System User
                  ID is currently logged on to the PAX System.
    _____

    EXAMPLE 1:

    Command issued: 10:10:10>QUERY BIRD <CR>

    Computer's response:  BIRD   -EE3
  
```



Figure 4-1. Presentation of A CMS/Time-of-Day Command

CMS/TIME-OF-DAY COMMAND

---

QUERY

---

FORMAT: QUERY Keyword

PARAMETERS: Keyword: NAMES  
specific System User ID  
TIME  
TRU  
USERS  
DISK

NOTES: None.

VARIATION A: QUERY NAMES

---

FUNCTION: System prints a list of all System User IDs currently logged on to the PAX System.

---

EXAMPLE:

Command issued: C>QUERY NAMES <CR>

Computer's response:

CAP006	-EF1,	FRED	-DEB,	V3MCC	-DED,	LACEE	-DSC
MAURICE	-DSC,	SHARPS	-EE6,	BIRD	-EE3,	NELSON	-DEA
CAPSINK	-DSC,	V3NAF	-DF8,	DARWIN	-DF3,	CHUCK2N	-EF4

SUMMARY: The system printed a list of all System User IDs currently logged on to the PAX System.

VARIATION B: QUERY specific System User ID.

---

FUNCTION: System verifies whether the specific System User ID is currently logged on to the PAX System.

---

EXAMPLE 1:

Command Issued: C>QUERY BIRD <CR>

Computer's response: BIRD -EE3

---

QUERY  
(Continued)

---

- (1) Command - Identifies the name of the command category.
- (2) \_\_\_\_\_ - Contains the name of the command.
- (3) FORMAT - Specifies the format in which the command must be issued. The following symbols are used to describe the format.
  - UPPERCASE LETTERS - Indicate exact words or abbreviated form must be entered.
  - LOWERCASE LETTERS - Indicate parameters entered in the command format as described below in Section (4) - PARAMETERS.

Note: Uppercase and lowercase letters are used for illustrative purposes only. Commands may be entered in either uppercase or lowercase letters.

- PARENTHESES - Indicate optional parameters. They are for illustrative purposes only and should not be typed when optional parameters are specified.
- (4) PARAMETERS - Specify additional information the user may have to include.
- (5) NOTES - Provide the user with additional information.
- (6) VARIATIONS - Each variation of a command is described in detail. This section specifies the specific format of the variation (6), describes the function (6a), and provides an example (6b). In the example, underlining indicates data to be entered by the user. A <CR> indicates the user must depress the CARRIAGE RETURN key.

QUICK REFERENCE GUIDE  
CMS/TIME-OF-DAY COMMANDS

	<u>COMMAND</u>	<u>FUNCTION</u>	<u>PAGE</u>
1.	COPY	Creates a new file on the ECONPACK permanent disk containing a duplicate copy of the specified existing file.	4-10
2.	DD1391	Accesses the DD Form 1391 Processor. The DD Form 1391 Processor is used to prepare and modify a DD1391 Form.	4-11
3.	<u>ECONPACK</u>	Returns the user to the MAIN ECONPACK MENU.	4-12
4.	<u>EDIT</u>	Creates a temporary file, prints NEW FILE:, and prompts the user for a text editor command.	4-13
5.	ERASE	Deletes the specified file from the  ECONPACK permanent disk.	4-15
6.	IBM	Changes the line editor from the QED editor to the IBM editor.	4-16
7.	<u>LIST</u>	Prints a list of files entered on the user's storage space on the permanent disk. Variations of the command will print all the files with the specified filetype.	4-17
8.	LISTR	Prints specific information about the files on the user's storage space on the ECONPACK permanent disk. The list is arranged alphabetically according to filetype. Variations of the command will print information only for files with the specific filename or filetype. The listing includes the following information: filename, filetype, file mode, line format, number of lines, number of blocks of storage space used, and the date and time the file was created or last modified.	4-20
9.	LISTS	Same as LISTR except the list is arranged in alphabetical order according to filenames.	4-24
10.	LOG	Exits the CMS environment or DD Form 1391 Processor System and returns to a PAX prompt. Also exits the PAX System when entered at a PAX prompt.	4-28

QUICK REFERENCE GUIDE  
CMS/TIME-OF-DAY COMMANDS  
(Continued)

	<u>COMMAND</u>	<u>FUNCTION</u>	<u>PAGE</u>
11.	MSG	Allows a user to send a one-line message to another user currently logged on to the PAX System. The message cannot be longer than 130 characters or contain more than 13 words. Each word cannot contain more than 8 characters.	4-29
12.	QED	Changes from the IBM editor to the QED editor.	4-31
13.	QUERY	Prints information concerning the system such as the specific System User IDs which are currently logged on to the PAX System.	4-32
14.	<u>RENAME</u>	Changes the filename and filetype of an existing file on the ECONPACK permanent disk to the specified new filename and filetype.	4-36
15.	SET	Prevents messages sent as a result of the MSG command from being printed at the user's terminal. The system notifies the sender that the receiver is not receiving messages.	4-37
16.	<u>SLEEP</u>	Allows messages sent by the CMS/Time-of-Day command, MSG, to be printed at the user's terminal as soon as they are sent. The user does not need to enter a CARRIAGE RETURN to receive the messages.	4-39
17.	<u>TYPE</u>	Prints the contents of the specified ECONPACK permanent disk file.	4-40

## CMS/TIME-OF-DAY COMMAND

### COPY

FORMAT: COPY (fn1)(ft1)(fm)(fn2)(ft2)(fm)

PARAMETERS: fn1 ft1: The filename and filetype of an existing ECONPACK permanent disk file.

fn2 ft2: The filename and filetype of the new duplicate file to be entered on the user's ECONPACK permanent disk.

(fm)a: File mode.

NOTES: If fn2 ft2 currently exists, then the existing file must be erased prior to copying the fn1 ft1 file.

---

FUNCTION: The system creates a new file on the ECONPACK permanent disk containing a duplicate copy of the specified existing file.

---

### EXAMPLE:

Command issued: 10:10:10>COPY TEST FILE1 A TEST2 FILE2 A <CR>

Computer's response: 10:10:30>

Summary: The system made a duplicate copy of the contents of the file, TEST FILE1, entered it in a new file named TEST2 FILE2, and prompted the user at the Time-of-Day prompt.

CMS/TIME-OF-DAY COMMAND

---

DD1391

---

FORMAT: DD1391

PARAMETERS: None.

NOTES: The DD Form 1391 Processor is the component of the DD Form 1391 Processor System in which forms are prepared, modified, and monitored.

---

FUNCTION: The system accesses the DD Form 1391 Processor and prompts the user for the appropriate Processor Identification (IDENT) word.

---

EXAMPLE:

Command issued: 11:05:07>DD1391 <CR>

Computer's response:

\*\*\*WELCOME TO DD1391 PROCESSOR!  
\*\*\*VERSION 7.1 22 FEB 85

IDENTIFICATION:>[User enters IDENT word.] <CR>

Summary: The system accessed the DD Form 1391 Processor and prompted the user for the appropriate IDENT word.

CMS/TIME-OF-DAY COMMAND

---

ECONPACK

---

FORMAT: ECONPACK

PARAMETERS: None.

FUNCTION: This command moves the user to the MAIN  
ECONPACK MENU.

EXAMPLE:

Command issued: 10:10:10>ECONPACK <CR>

Computer's response:

ALREADY MONITORING PROCESS.

\*\*\* WELCOME TO THE ECONPACK SYSTEM:  
\*\*\* VERSION 3.1 (14 JULY 1987)

IDENTIFICATION:>[Enter your IDENT word.]

YOU HAVE JUST ENTERED ECONPACK AS:

---

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR

ENTER DESIRED OPTION>\_\_\_\_\_

Summary: The system moved the user to the MAIN  
ECONPACK MENU and prompted the user  
to enter a menu option number.

## CMS/TIME-OF-DAY COMMAND

---

EDIT

---

FORMAT:        EDIT(fn) (ft)

PARAMETERS:   fn ft: The filename (fn) and filetype (ft) used to identify the file on the ECONPACK permanent disk.

Note: Both the filename and filetype may contain a maximum of eight characters; each character may be a letter, a digit, a period (.), or a dollar sign (\$). Neither name may contain a blank space.

NOTES:

1. Whenever accessing a file on the permanent disk, the user must enter both the filename and filetype.
2. For organizational purposes, it is recommended the user enter a filename and filetype that reflect the content of the file.
3.    FT75F001 = Input file  
      FT76F001 = Report file

---

FUNCTION 1:    If a permanent file with the specified filename and filetype does not exist, the system creates a temporary file, prints NEW FILE:, and prompts the user for a text editor command.

Note: The temporary file will become a permanent file after the text editor command, FILE, is issued.

---

EXAMPLE:

Command issued:        10:10:10>EDIT COMMENT 1 <CR>

Computer's response:   NEW FILE:  
                          E>



---

EDIT (Continued)

---

Summary:

The system created a temporary file, printed NEW FILE: to notify the user the file was new, and prompted for a text editor command.

---

FUNCTION 2: If a permanent file with the specified filename and filetype exists on the permanent disk, the system creates a duplicate temporary file and prompts the user for a text editor command.

Note: Any modifications to the temporary file will not become part of the permanent file until the text editor command, FILE, is issued.

---

EXAMPLE:

Command issued: 10:10:10>EDIT COMMENT 3 <CR>

Computer's response: E>\_\_\_\_\_

Summary:

The system created a duplicate temporary file for the existing file, COMMENT 3, and prompted the user for a text editor command.

## CMS/TIME-OF-DAY COMMAND

---

### ERASE

---

FORMAT: ERASE (fn) (ft)

PARAMETERS: fn ft: Filename and filetype of the file to be deleted.

NOTES: None.

---

FUNCTION: The system deletes the specified file from the ECONPACK permanent disk and prompts for another command.

---

#### EXAMPLE:

Command issued: 10:10:10>ERASE D1BAR MEMO <CR>

Computer's response: 10:10:15>\_\_\_\_\_

Summary: The system deleted the file, D1BAR MEMO, from the user's permanent disk and prompted the user for another command.

## CMS/TIME-OF-DAY COMMAND

---

IBM

---

FORMAT: IBM

PARAMETERS: None.

NOTES: This command need only be entered if the system is operating in the QED edit mode and the user wishes to use the IBM edit mode.

---

FUNCTION: The system changes to the IBM edit mode and prompts for another Time-of-Day/CMS command.

---

### EXAMPLE:

Command issued: 10:10:10>IBM <CR>

Computer's response: THE IBM EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE QED EDIT MODE AT ANY TIME BY TYPING "QED" AT THE TIME-OF-DAY> OR C>.

THE FOLLOWING COMMANDS ARE APPLICABLE IN THIS MODE:

1. @ = DELETES A CHARACTER.
2. [ = DELETES THE ENTIRE LINE.

Summary: The system changed the user's edit mode to IBM and returned to the Time-of-Day> or C>.

## CMS/TIME-OF-DAY COMMAND

### LIST

FORMAT:           \*   \*  
                  LIST (fn) (ft)

PARAMETERS:    fn:   The filename of an existing file on the  
                              ECONPACK permanent disk.

                  ft:   The filetype of an existing file on the  
                              ECONPACK permanent disk.

                  \* :   An asterisk denoting "all".

NOTES:           1. All variations of this command list only those  
                              files located on the user's storage space on the  
                              ECONPACK permanent disk.

                  2. All files appearing on the list are not  
                              created by users at the activity. Some of the  
                              files are required for programming purposes and  
                              cannot be removed by the user.

### VARIATION A:    LIST

---

FUNCTION:       The system prints a list of all files entered  
                              on the user's storage space on the ECONPACK  
                              permanent disk.

---

### EXAMPLE:

Command issued:       10:10:10>LIST <CR>

Computer's response:   DOFCPRS       STATUS       A1  
                              FILE        FT75F001    A1  
                              FILE        FT76F001    A1  
                              FN4         FN4.        A1  
                              LOAD        MAP         A5  
                              NEW         FILE        A1  
                              PROFILE    EXEC        A1

10:10:15>\_\_\_\_\_

Summary:           The system printed a list of all files  
                              on the user's storage space on the  
                              ECONPACK permanent disk.

---

LIST (Continued)

---

VARIATION B: LIST (fn)(ft)

---

FUNCTION: If the file specified by its filename and file-type is entered on the user's storage space on the ECONPACK permanent disk, the system will print its filename and filetype.

---

EXAMPLE:

Command issued: 10:10:10> LIST SR\* MEMO <CR>

Computer's response: SR2 MEMO A1  
10:10:15> \_\_\_\_\_

Summary: The system listed the specified file from the user's storage space on the ECONPACK permanent disk.

VARIATION C: LIST (fn) \*

---

FUNCTION: The system lists all files which have been assigned the specified filename.

---

EXAMPLE:

Command issued: 10:10:10> LIST COMMENT \* <CR>

Computer's response: COMMENT ONE A1  
COMMENT THREE A1  
COMMENT TWO A1

Summary: The system listed all files containing the filename, COMMENT.

---

LIST (Continued)

---

VARIATION D: LIST \* (ft)

---

FUNCTION: The system lists all files which have been  
assigned the specified filetype.

---

EXAMPLE:

Command issued: 10:10:10>LIST \* MEMO <CR>

Computer's response: ADMIN MEMO  
BARRACKS MEMO  
HOSP MEMO  
SR2 MEMO

Summary: The system listed all the files which  
contained the filetype, MEMO.

# CMS/TIME-OF-DAY COMMAND

## LISTR

FORMAT:           \*   \*  
LISTR (fn)(ft)

PARAMETERS:   fn: The filename of an existing file on the  
ECONPACK permanent disk.

ft: The filetype of an existing file on the  
ECONPACK permanent disk.

\* : An asterisk denoting "all".

NOTES:           1. The LISTR command provides the following  
information on each file:

FILENAME           The filename of an existing file  
on the permanent disk.

FILETYPE           The filetype of an existing file on  
the permanent disk.

FM                 File mode.

FORMAT             The file's format. Most files will  
have an "F". This indicates the  
length of each record or line.

LRECL              Line record length - 80 characters.

RECS               The number of records in the file.

BLOCK              The storage space on the permanent  
disk is divided into blocks, each  
block containing 10 records or lines.  
The number entered under this heading  
indicates the number of blocks  
currently being occupied by the file.

DATE               The date the file was created or last  
modified.

TIME               The time of day the file was created  
or last modified.

---

## LISTR (Continued)

---

2. All variations of this command list only those files located on the user's storage space on the permanent disk.

3. Not all files appearing on the list are created by users at the activity. Some of the files are required for programming purposes and cannot be removed by the user.

### VARIATION A: LISTR

---

FUNCTION: The system prints a list of all files on the user's storage space on the permanent disk. The list is arranged alphabetically according to the filetypes and includes specific information on each file.

---

### EXAMPLE:

Command issued: 10:10:10>LISTR <CR>

### Computer response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
EDIT	CHOICE	A1	V	3	1	1/11/86	23:26:
+ABEND	EXEC	A1	V	40	22	1/11/86	23:29:
PROFILE	EXEC	A1	V	22	11	9/11/85	5:44:
SALLY	FT75F001	A1	F	80	34	1/08/86	19:05:
TEST	FT75F001	A1	F	80	247	1/11/86	15:57:
SALLY	FT76F001	A1	F	133	56	1/08/86	19:05:
TEST	FT76F001	A1	F	133	729	1/11/86	15:37:

10:10:15>\_\_\_\_\_

Summary: The system printed various types of information about all the files on the user's storage space on the permanent disk. The list was organized alphabetically according to the filetypes.



---

LISTR (Continued)

---

VARIATION B:        LISTR (fn) (ft)

---

FUNCTION:    The system prints information pertaining to the  
                 file specified by its filename and filetype.

---

EXAMPLE:

Command issued:   10:10:10>LISTR TEST FT76F001 <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
TEST	FT76F001	A1	F	133	729	95	1/11/86 15:37:

10:10:15>\_\_\_\_\_

Summary:            The system printed information for the  
                         specified file, TEST FT76F001.

VARIATION C: LISTR (fn) \*

---

FUNCTION:    The system prints information pertaining to all  
                 files which have been assigned the specified  
                 filename.

---

EXAMPLE:

Command issued:   10:10:10>LISTR TEST \* <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
TEST	FT75F001	A1	F	80	247	20	1/11/86 15:57:
TEST	FT76F001	A1	F	133	729	95	1/11/86 15:37:

10:10:15>\_\_\_\_\_

Summary:            The system printed information regarding  
                         all files containing the filename, TEST.

---

LISTR (Continued)

---

VARIATION D:    LISTR \* (ft)

---

FUNCTION:    The system prints information pertaining to all  
files which have been assigned the specified  
filetype.

---

EXAMPLE:

Command issued:    10:10:10>LISTR \* FT75F001 <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
SALLY	FT75F001	A1	F	80	34	3	1/08/86 19:05:
TEST	FT75F001	A1	F	80	247	20	1/11/86 15:57:

10:10:15>\_\_\_\_\_

Summary:    The system printed information regarding  
all files containing the filetype,  
FT75F001.

## CMS/TIME-OF-DAY COMMAND

### LISTS

FORMAT:           \*       \*  
LISTS (fn) (ft)

PARAMETERS:   fn:   The filename of an existing file on the  
                  ECONPACK permanent disk.

                  ft:   The filetype of an existing file on the  
                  ECONPACK permanent disk.

                  \*:    An asterisk denoting "all".

NOTES:           1.   The LISTS command provides the following  
                  information on each file listed:

FILENAME	The filename of an existing file on the permanent disk.
FILETYPE	The filetype of an existing file on permanent disk.
FM	File mode.
FORMAT	The file's line format. Most files will have an "F". This means that the length of each record, or line, is "fixed" (F).
LRECL	Line record length - 80 characters.
RECS	The number of records or lines in the file.
BLOCK	Storage space on the permanent disk is divided into blocks, each block containing 10 lines. The number entered under this heading indicates the number of blocks currently being occupied by the file.
DATE	The date the file was created or last modified.
TIME	The time of day the file was created or last modified.

---

## LISTS (Continued)

---

2. All variations of this command list only those files located on the user's storage space on the permanent disk.

3. All files appearing on the list are not created by users at the activity. Some of the files are required for programming purposes and cannot be removed by the user.

### VARIATION A: LISTS

---

FUNCTION: The system prints a list of all files on the user's storage space on the permanent disk. The list is arranged alphabetically according to the filenames and includes specific information pertaining to each file.

---

### EXAMPLE:

Command issued: 10:10:10>LISTS <CR>

### Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
+ABEND	EXEC	A1	V	40	22	1	1/11/86 23:29:
SALLY	FT75F001	A1	F	80	34	3	1/08/86 19:05:
SALLY	FT76F001	A1	F	133	56	8	1/08/86 19:05:
EDIT	CHOICE	A1	V	3	1	1	1/11/86 23:26:
PROFILE	EXEC	A1	V	22	11	1	9/13/85 5:44:
TEST	FT75F001	A1	F	80	247	20	1/11/86 15:57:
TEST	FT76F001	A1	F	133	729	95	1/11/86 15:37:

Summary: The system printed various types of information pertaining to all the files on the user's storage space on the permanent disk. The list was organized alphabetically according to the file-name.

---

LISTS (Continued)

---

VARIATION B: LISTS (fn) (ft)

---

FUNCTION: The system prints information pertaining to the file specified by its filename and filetype.

---

EXAMPLE:

Command issued: 10:10:10>LISTS TEST FT76F001 <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
TEST	FT76F001	A1	F	133	729	95	1/11/86 15:37:

10:10:15>\_\_\_\_\_

Summary: The system printed information about the specified file, TEST FT76F001.

VARIATION C: LISTS (fn) \*

---

FUNCTION: The system prints information pertaining to all files which have been assigned the specified filename.

---

EXAMPLE:

Command issued: 10:10:10>LISTS TEST \* <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
TEST	FT75F001	A1	F	80	247	20	1/11/86 15:57:
TEST	FT76F001	A1	F	133	729	95	1/11/86 15:37:

10:10:15>\_\_\_\_\_

Summary: System printed information related to all files containing the filename, TEST.

---

LISTS (Continued)

---

VARIATION D: LISTS \* (ft)

---

FUNCTION: The system prints information pertaining to all files which have been assigned the specified filetype.

---

EXAMPLE:

Command issued: 10:10:10>LISTS \* FT75F001 <CR>

Computer's response:

FILENAME	FILETYPE	FM	FORMAT	RECS	BLOCKS	DATE	TIME
SALLY	FT75F001	A1	F	80	34	3	1/08/86 19:05:
TEST	FT75F001	A1	F	80	247	20	1/11/86 15:57:

10:10:12>\_\_\_\_\_

Summary: The system printed information pertaining to all files containing the filetype, FT75F001.

CMS/TIME-OF-DAY COMMAND

LOG

FORMAT: LOG

PARAMETERS: None.

NOTES: None.

---

FUNCTION: The system returns to the PAX System and prompts for a selection from the PAX System Menu.

---

[Note: Before returning to the PAX System, the computer prints the amount of clock time (CONNECT) and computer time (TRU) the user has used since accessing the ECONPACK System.]

EXAMPLE:

Command issued: 10:10:10>LOG <CR>

Computer's response:

\*\*\* LEAVING DD1391 PROCESSOR SYSTEM \*\*\*

PROJECT 1391  
CONNECT=

00:57:40 TRU=

22.70 TIO=

8,102

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

PAX>LOG <CR>

Summary:

The system returned to the PAX System and prompted the user for a response.

## CMS/TIME-OF-DAY COMMAND

---

### MSG

---

FORMAT: MSG (user ID) ( message)

PARAMETERS: user ID: System User ID for user currently logged on to the computer.

message: A one line message with the following characteristics:

1. It cannot contain more than 130 characters.
2. It cannot contain more than 13 words.
3. Each word cannot contain more than 8 characters.

NOTES:

1. The command, QUERY NAMES, will list the IDs for all users of PAX currently logged on to the system. Any of the IDs listed may be sent a message by the MSG command.
2. If the System User ID is unknown, the DD Form 1391 Processor System Time-Of-Day command, WHOISIT, can be used to obtain the ID of a particular activity.
3. A user can lock out incoming MSGs from other users by issuing the command, SET MSG OFF.
4. The user issuing the MSG command is not notified when the user to whom the message was sent receives it. The user is notified if the user to whom the message was sent is not logged on to the computer.

---

FUNCTION: The system prints the MSG as soon as the user to whom it was sent enters a CARRIAGE RETURN.\*

---

\*A user need not enter a CARRIAGE RETURN to receive a MSG if the command, SLEEP, is in effect.



---

MSG (Continued)

---

EXAMPLE:

Command issued:                   10:10:10>MSG BIRD THANKS FOR QUICK  
RESPONSE TO PROBLEM. <CR>

Computer's response to sender: 10:10:15>\_\_\_\_\_

Computer's response to receiver after a CARRIAGE RETURN is  
entered:

MSG FROM TRAINING: THANKS FOR QUICK RESPONSE TO PROBLEM.

Summary:                   The system stored the message until the  
receiver entered a CARRIAGE RETURN.  
When the receiver entered a CARRIAGE  
RETURN the system then printed the ID of  
the user who sent the message and the  
message.

## CMS/TIME-OF-DAY COMMAND

---

QED

---

FORMAT: QED

PARAMETERS: None.

NOTES: There are two edit modes, the IBM and the QED, in which the system may operate. These edit modes only affect the methods of deleting characters from a data line BEFORE the CARRIAGE RETURN key has been depressed.

---

FUNCTION: The system changes to the QED edit mode and prompts the user for another command.

---

EXAMPLE:

Command issued: 10:10:10>QED <CR>

Computer's response:

THE QED EDIT MODE WILL AUTOMATICALLY BE USED FOR THIS AND SUBSEQUENT TERMINAL SESSIONS. THIS SELECTION MAY BE CHANGED TO THE IBM EDIT MODE AT ANY TIME BY TYPING "IBM" AT TIME-OF-DAY> OR C>.

THE FOLLOWING COMMANDS ARE APPLICABLE IN THIS MODE:

1. CONTROL A = FOR CHARACTER DELETION
2. CONTROL W = FOR WORD DELETION
3. CONTROL Q = FOR LINE DELETION
4. CONTROL R = FOR PRINTING REVISED LINE BEFORE ENTERING A CARRIAGE RETURN

10:12:01>\_\_\_\_\_

Summary: The system changed to the QED edit mode and prompted the user with a Time-of-Day prompt.

## CMS/TIME-OF-DAY COMMAND

### QUERY

FORMAT: QUERY (Keyword)

PARAMETERS:      KEYWORD: NAMES  
  Specific System User ID  
  TIME  
  TRU  
  USERS  
  DISK

NOTES:            NONE.

VARIATION A:      QUERY NAMES

---

FUNCTION:      System prints a list of all System User IDs  
  currently logged on to the PAX System.

---

#### EXAMPLE:

Command issued:    10:10:10>QUERY NAMES <CR>

#### Computer's response:

CAP006	-EF1,	FRED	-DE8,	V3MCC	-DED,	LACEE	-DSC
MAURICE	-DSC,	SHARP5	-EE6,	BIRD	-333,	NELSON	-DEA
CAPSINK	-DSC,	V3NAF	-DF8,	DARWIN	-DF3,	CHUCK2N	-EF4

SUMMARY:            The system printed a list of all System  
  User IDs currently logged on to the PAX  
  System.

VARIATION B:      QUERY (specific System User ID.)

---

FUNCTION:      System verifies whether the specified System User  
  ID is currently logged on to the PAX System.

---

#### EXAMPLE 1:

Command issued:    10:10:10>QUERY BIRD <CR>

Computer's response:    BIRD      -EE3

---

QUERY (Continued)

---

Summary: The system confirmed that System User ID, BIRD, was currently logged on to the PAX System.

EXAMPLE 2:

Command issued: 10:10:10>QUERY BIRD <CR>

Computer's response: DMKCQG045E BIRD NOT LOGGED ON

Summary: The system notified the user that the ID, BIRD, was not currently logged on to the computer.

VARIATION C: QUERY TIME

---

FUNCTION: The system displays the current time, the date, and the amount of connection time since the user accessed the ECONPACK System at the PAX prompt.

---

EXAMPLE:

Command issued: 10:10:10>QUERY TIME <CR>

Computer's response:

TIME IS 14:45:32 CDT WEDNESDAY 10/28/87  
CONNECT= 01:02:31: VIRTCPU = 000:00.98 TOTCPU= 000:04:13

Summary: The system specified the total clock time (hours, minutes, seconds) the user had been logged on to the ECONPACK System component of the PAX System.

---

QUERY (Continued)

---

VARIATION D: QUERY TRU

---

FUNCTION: The system lists the total clock time (hours, minutes, seconds) and the number of TRUs used since the user accessed the ECONPACK System at the PAX prompt.

---

EXAMPLE:

Command issued: 10:10:10>QUERY TRU <CR>

Computer's response:

PROJECT ECON  
CONNECT= 01:02:41 TRU= 32.19 TIO= 23,338

Summary: The system specified the connection time and the amount of TRUs used since the user accessed the ECONPACK System.

VARIATION E: QUERY USERS

FUNCTION: The system lists the number of users currently logged on to the PAX System.

EXAMPLE:

Command issued: 10:10:10>QUERY USERS <CR>

Computer's response: 028 USERS, 000 DIALED

Summary: System specified the number of users currently logged on to the PAX System.

VARIATION F: QUERY DISK

---

FUNCTION: The system displays information regarding the user's ECONPACK permanent disk files.

---

---

QUERY (Continued)

---

EXAMPLE:

Command issued: 10:10:10>QUERY DISK <CR>

Computer's response:

LABEL	CUU	M	STAT	BLK- SIZE	FILES	BLKS- USED-(%)	BLKS- LEFT	BLK- TOTAL
HNDECO	302	A	R/W	1024	35	869-42	1221	2090
TAFT	411	B	R/O	1024	30	2911-35	5449	8360
ACSLIB	191	P	R/O	1024	160	4172-50	4188	8360
UPL370	500	R	R/O	1024	316	6232-85	1083	7315
CMS190	190	S	R/O	4096	281	3033-95	159	3192
CMS19E	19E	Y/S	R/O	2048	285	6893-76	2227	9120

10:15:01>\_\_\_\_\_

Summary:

The system displayed information about the user's ECONPACK permanent disk files.

## CMS/TIME-OF-DAY COMMAND

### RENAME

FORMAT:        RENAME (fn1) (ft1) (fm) (fn2) (ft2) (fm)

PARAMETERS:   fn1 ft1:   The filename and filetype of an  
                                 existing ECONPACK permanent disk file.

                  fn2 ft2:   The filename and filetype to replace  
                                 the existing name and filetype of an  
                                 ECONPACK permanent disk file.

                  fm:        File mode.

NOTES:        The contents of the specified file are not  
                                 affected by this command.

---

FUNCTION:     The system changes the filename and filetype  
                                 of an existing file on the ECONPACK permanent  
                                 disk to the specified new filename and file-  
                                 type.

---

#### EXAMPLE:

Command issued:    10:10:10>RENAME COST MEMO A COSTHIGH  
                                 MEMO A <CR>

Computer's response: 10:10:12>\_\_\_\_\_

Summary:        The system changed the title of the file,  
                                 COST MEMO, to COSTHIGH MEMO and prompted  
                                 the user for another Time-of-Day command.

## CMS/TIME-OF-DAY COMMAND

SET

FORMAT: SET MSG (setting)

PARAMETERS: MSG: Refers to the printing of a message at the user's terminal as the result of the MSG command.

setting: OFF  
ON

VARIATION A: SET MSG OFF

---

FUNCTION: The system prevents messages sent as a result of the MSG command from being printed at the user's terminal. The system notifies the sender that the receiver is not receiving messages.

---

EXAMPLE:

Command issued: 10:10:10>SET MSG OFF <CR>

Computer's response: 10:10:12>\_\_\_\_\_

Summary: The system will prevent any messages from printing at the user's terminal and will notify the user sending a MSG that the user is not receiving messages. MSG will be set off until the command, SET MSG ON, is issued.

VARIATION B: SET MSG ON

---

FUNCTION: The system prints messages sent as a result of the MSG command. The system automatically sets MSG ON when the user logs on to the computer. The only time the user needs to enter this command is to cancel the effects of a previously entered SET MSG OFF command.

---



---

SET (Continued)

---

EXAMPLE:

Command issued: 10:10:10>SET MSG ON <CR>

Computer's response: 10:10:12>\_\_\_\_\_

Summary: The system cancelled the effect of the  
SET MSG OFF command.

## CMS/TIME-OF-DAY COMMAND

---

### SLEEP

---

FORMAT: SLEEP

PARAMETERS: None.

NOTES: The user cannot enter commands while the SLEEP command is in effect.

---

FUNCTION: The system allows messages sent by the command, MSG, to be printed at the user's terminal as soon as they are sent; the user does not need to enter a CARRIAGE RETURN to receive the message(s). SLEEP remains in effect until the user terminates it. To do this, the user must depress either the ESCAPE key or the ALT MODE key twice. Connect time of two dollars per hour (\$2.00) is charged while the terminal is in the SLEEP mode.

---

EXAMPLE:

Command issued: 10:10:10>SLEEP <CR>

Computer's response: --

Summary: The system is "set" to print a MSG as soon as it is sent. To return to the Time-of-Day>, the user should depress the ESCAPE key twice.

## CMS/TIME-OF-DAY COMMAND

---

### TYPE

---

FORMAT: TYPE (fn) (ft)

PARAMETERS: fn: The filename of an existing file on the  
ECONPACK permanent disk.

ft: The filetype of an existing file on the  
ECONPACK permanent disk.

---

FUNCTION: The system prints the contents of the specified  
file and prompts for another command.

---

### EXAMPLE:

Command issued: 10:10:10>TYPE COST MEMO <CR>

Computer's response: THE COST ESTIMATE FOR THE PRIMARY  
FACILITY APPEARS TOO HIGH. SEND  
ADDITIONAL INFORMATION.  
10:12:01>\_\_\_\_\_

Summary: The system printed the contents of the  
file, COST MEMO, and prompted for  
another Time-of-Day command.

4.4 Monitor Ready Commands: Monitor ready commands are used within the DD Form 1391 Processor System to prepare, modify, or monitor DD1391 Forms. The following pages present a display of a monitor ready commands, a Quick Reference Guide to monitor ready commands encountered by ECONPACK users, and detailed descriptions of these commands.

Figure 4.2. Presentation of a Monitor Ready Command

3. AVAILABLE TO:  
INSTALLATION
1. MONITOR READY COMMAND  
\_\_\_\_\_  
2. SR1  
\_\_\_\_\_
4. AUTHORITY: S, R, V, OR W\*
5. FORMAT: SR1 FORM formno
6. PARAMTERS: formno: Form identification number assigned by the DD Form 1391 Processor System.
7. NOTES: Districts/Divisions and MACOMs/MASCOMs are allowed to use this command on forms they have prepared and have not yet transferred to an Installation.

---

FUNCTION: This command will load an Economic Analysis report from the monitor ready prompt.

Note: The report must have been generated from ECONPACK.

---

EXAMPLE:

Command issued: MONITOR READY>SR1 FORM XXXXX <CR>

Computer's response: PLEASE ENTER FILENAME OF ECONOMIC ANALYSIS TO BE ENTERED. (NOTE: AN ECONOMIC ANALYSIS REPORT MUST HAVE BEEN GENERATED FROM THE ECONPACK PROGRAM.) ENTER FILENAME OR <CR> TO RETURN TO THE MONITOR READY PROMPT.>TEST5 <CR>

YOUR ECONOMIC ANALYSIS WILL BE ENTERED INTO BLOCK SR1. DO YOU WISH TO CONTINUE (YES/NO)?>Y <CR>

PLEASE WAIT - THANK YOU

NOW PROCESSING YOUR INSTRUCTION...

NOW PROCESSING YOUR INSTRUCTION...

YOUR ECONOMIC ANALYSIS REPORT FILE HAS BEEN INSERTED INTO SR1 OF FORM XXXXX.

Each section is described below:

- (1) MONITOR READY - identifies the name of the command  
COMMAND category.
- (2) \_\_\_\_\_ - contains the name of the command.
- (3) AVAILABLE TO - All users do not have access to all  
monitor ready commands. The system will  
execute the command only for the users  
identified in this section.
- (4) AUTHORITY - In addition to having access to a  
specific command, the user must have the  
appropriate authority over the specific  
form. This section lists the authority  
a user must have over the form before  
the system will execute the commands.

The seven authority levels are:

- S (SUBMIT - Only OCE and MACOM/MASCOM)
- W (WRITE - Only INSTALLATION)
- P (PERMIT - ALL)
- R (READ - Only MACOM/MASCOM and INSTALLATION)
- V (REVIEW - Only OCE and MACOM/MASCOM)
- Y (RESULT Of RMP command - Only MACOM/MASCOM)
- Z (RESULT Of RWP command - Only INSTALLATION and DA  
Program Manager)

ALL indicates all users with any level of  
authority over the form may issue the command.

- (5) FORMAT - specifies the format in which the command must  
be entered. The following symbols are used to  
describe the format:

UPPERCASE LETTERS - indicate the exact word or its  
abbreviation must be entered.

CHARACTERS UNDERLINED - indicate the minimum abbreviation  
accepted.

LOWERCASE LETTERS - indicates parameters entered in the  
command format as described in  
Section (6) PARAMETERS/

Note: Uppercase and lowercase letters are used for illustrative purposes only. Commands can be entered in either uppercase or lowercase letters.

PARENTHESES - are used to indicate optional parameters. They are for illustrative purposes only and should not be typed when optional parameters are specified.

- (6) PARAMETERS - specify the kind of additional information the user may have to include as part of the command format.
- (7) NOTES - provide the user with additional information.
- (8) VARIATIONS - Each variation of a command is described in detail. This section specifies the specific format of the VARIATION (8), describes the function (8a), and provides an example (8b). In the example, underlining indicated data to be entered by the user. A <CR> indicates the user must depress the CARRIAGE RETURN key.

QUICK REFERENCE GUIDE  
MONITOR READY COMMANDS

<u>COMMAND</u>	<u>FUNCTION</u>	<u>AVAILABLE TO</u>	<u>PAGE</u>
1. <u>DIRECTORY</u>	Prints a directory of forms to which the user has access. If keywords are entered, the system lists only those forms which match the specified values.	ALL	4-45
2. <u>DIR/F</u>	Prints a more detailed directory than the DIR command does of forms to which the user has access.	ALL	4-53
3. <u>DIR/W</u>	Prints a directory of forms to which the user has access. The printout identifies all activities with access to specific forms and indicates the corresponding authority level the activities have to the listed forms.	ALL	4-61
4. <u>DISPLAY</u>	Prints the contents of the working copy of the specified DD1391 Form.	ALL	4-62
5. <u>EDIR</u>	Prints a directory of projects which contain Economic Analyses Reports in the system for which the user has access.	ALL	4-69
6. <u>QUIT</u>	Causes the system to exit the DD Form 1391 Processor and return to the Time-of-Day prompt.	ALL	4-69
7. <u>SRI</u>	Loads an ECONPACK report file from the monitor ready prompt.	INSTALLATION	4-70

AVAILABLE TO:  
ALL

MONITOR READY COMMAND

DIRECTORY

AUTHORITY: N/A

FORMAT: DIRECTORY (keyword value) (keyword value) (keyword value)

PARAMETERS:    keyword:                    value:

CATCODE                    3 or 5 DIGIT CATEGORY CODE

COMMENT                    Comments made by a user.

FORM                      Form identification number assigned  
   by the DD Form 1391 Processor.

INSTALLATION                'INSTALLATION'S NAME' -- The  
   installation's name must be  
   enclosed in single quotation marks  
   (' ') if more than one word.

LOCATION                    Installation's location -- Specify  
   only the state or the country.  
   Cities are not accepted.

PROGRAM                    PROGRAM TYPE -- One of the  
   following program types must be  
   specified: MCA, PBS, NAF, AFH,  
   M&R, COMM or AAFES

PROJECT                    3 or 5 DIGIT CATEGORY CODE

PROJNO or PN                Permanent project number assigned  
   by the DA Program Manager.

RANK                      RANK DESIGNATOR:

                                  OP            Program Manager Priority

                                  CP            Major Command's Priority

                                  SP            Major Subordinate Command's  
   Priority

                                  IP            Installation's Priority



---

DIRECTORY (Continued)

---

SINCE DATE (mm/dd/yy) -- each section must contain two digits.

YEAR 2 or 4 DIGIT FISCAL YEAR

NOTES: 1. The user can specify one of the following activity keywords and get a listing of the forms in his/her directory to which the specified activity has read or write access.

<u>Keyword</u>	<u>Value</u>
PM	Program Manager
MACOM	Major Command
MASCOM	Major Subordinate Command
DIV	Division
DIST	District

2. The following information is displayed for each form:

A.	FY	Fiscal year
B.	CATCODE	Category code
C.	PROJECT DESCRIPTION	Project title in accordance with AR 415-28.
D.	PROJNO	Permanent project number assigned by the DA Program Manager.
E.	TEMPNO	Temporary project number assigned by the preparer.
F.	STATUS	Name of activity with the authority to modify the form.
G.	CHGDATE	Date the form was last modified.
H.	A	User's current authority over the form.

---

## DIRECTORY (Continued)

---

### I. FORWARD

Form identification number assigned by the DD Form 1391 Processor. An F, E, or T may be printed next to the form number.

1. An "F" next to the form number indicates Blocks 1-11 are frozen and cannot be accessed or modified.

2. An "E" next to the form number indicates the DA Cost Reviewers (DAEN-ECE-S) have frozen Blocks 2.B, 2.C, and 9. The user cannot access or change these blocks.

3. A "T" next to a form number indicates both the Program Manager (or MACOM/MASCOM) and the DA Cost Reviewers (DAEN-ECE-S) have issued the FREEZE command.

3. Users can enter a maximum of three keywords and their corresponding values. Only keywords RANK and PROJECT cannot be issued together.

4. The function of each command variation is explained. A system example is not given for each Directory format variation. To see an example of the directory displayed as a result of the command issued, the user is encouraged to simply enter the desired command variation at the MONITOR READY prompt. All directories will be in the same format as the one presented in VARIATION A. The information provided will be limited dependent upon the command issued.

---

DIRECTORY (Continued)

---

VARIATION A: DIRECTORY

---

FUNCTION: The system prints a list of all forms to which the user has access.

---

EXAMPLE:

Command issued: MONITOR READY>DIRECTORY <CR>

Computer's response:

\*\*\*SET UP PRINTER ... HIT CARRIAGE RETURN TO CONTINUE  
><CR>

03/25/86

\*\*\* FOR OFFICIAL USE ONLY \*\*\*

DIRECTORY

FY CATCODE PROJECT DESCRIPTION PROJNO TEMPNO STATUS CHGDATE A FORMNO

FORT HUNTSVILLE

ALABAMA

84	74062	SNACK BAR		T200	MACOM	02/18/83 R	3299
84	74068	RECREATION CENTER		T138	INST	03/08/83 W	4110E
85	74060	LUNCH ROOM		T530	INST	04/07/85 W	4150
86	17150	BATTALION CLASSROOMS	00415	T415	OCE	02/03/85 R	2999
87	51010	HOSPITAL		T306	INST	04/15/85 W	5000
88	74068	RECREATION CENTER	00390	T390	INST	03/11/85 W	3001F
88	88010	FIRE ALARM SYSTEM		T125	INST	02/29/85 W	2893T

FORT EUROPE

GERMANY

88	74055	EXCHANGE WAREHOUSE	000301	T301	OCE	04/01/85 P	2089
----	-------	--------------------	--------	------	-----	------------	------

END OF DIRECTORY..

SUMMARY: The system listed all forms to which the user had access. Each form was listed under the name of the installation for which it was prepared. The "E" next to form number 4110 indicated Blocks 2.B, 2.C, and 9 were frozen by Cost Reviewers (DAEN-ECE-S). The "F" next to form number 3001 indicated Blocks 1-11 were frozen for the Program Manager. The "T" next to form number 2893 indicated Blocks 1-11 were frozen by both the Cost Reviewers and the Program Manager. [See page 4-47.]

---

DIRECTORY (Continued)

---

VARIATION B:    DIRECTORY CATCODE category code

---

FUNCTION: The system prints a list of all forms to which the user has access that contain the specified category code.

---

Command example:    MONITOR READY>DIRECTORY CATCODE 74068 <CR>

---

VARIATION C:    DIRECTORY COMMENT SINCE mm/dd/yy

---

FUNCTION: The system prints a list of all forms to which comments have been made or revised since the specified date.

---

Command example:    MONITOR READY>DIRECTORY COMMENT SINCE  
03/25/83 <CR>

---

VARIATION D:    DIRECTORY FORM formno

---

FUNCTION: The system prints a directory listing of the specified form to which the user has access.

---

Command example:    MONITOR READY>DIRECTORY FORM 3299 <CR>

---

VARIATION E:    DIRECTORY INSTALLATION 'installation's name'

---

FUNCTION: The system prints a list of forms to which the user has access that were prepared for the specified installation.

---

Command example:

MONITOR READY>DIRECTORY INSTALLATION 'FORT EUROPE' <CR>

---

---

DIRECTORY (Continued)

---

VARIATION F:    DIRECTORY LOCATION location

---

FUNCTION: The system prints a list of all forms to which the user has access which were prepared for the specified location.

Note: Only a state or country other than the U.S. may be entered. The system will not accept the names of cities.

---

Command example:    MONITOR READY>DIRECTORY LOCATION ALABAMA <CR>

VARIATION G:    DIRECTORY PROGRAM program type (YEAR XX)  
                  (INST 'installations name')

---

FUNCTION: The system prints a directory of the forms which contain the specified program type. The directory listing can be limited to forms for a certain year and/or activity if the year and/or activity is specified.

---

Command example:    MONITOR READY>DIRECTORY PROGRAM MCA  
                          YEAR 88 <CR>

VARIATION H:    DIRECTORY PROJECT category code

---

FUNCTION: The system prints a list of all forms on the system which contain the specified category code.

---

Command example:    MONITOR READY>DIRECTORY PROJECT 74068 <CR>

VARIATION I:    DIRECTORY PROJNO (OR PN) projno

---

FUNCTION: The system prints a directory listing of the form to which the user has access that contains the specified permanent project number.

---

Command example:    MONITOR READY>DIRECTORY PN 00390 <CR>

---

DIRECTORY (Continued)

---

VARIATION J: DIRECTORY RANK rank designator

---

FUNCTION: The system prints a DIR/F listing of all forms to which the user has access that have been assigned a priority rank code by the activity level indicated by the rank designator. These forms are sequenced according to the priority rank code.

NOTE: The keyword, CODE, may also be used with the DIR RANK command to cause the system to print a directory listing of the forms which have been ranked with the specified priority code. In the command format, the keyword, RANK, must precede the word, CODE. The keyword, CODE, may be used with other keywords such as CATCODE, INSTALLATION, LOCATION, etc.

---

SAMPLE FORMAT: MONITOR READY>DIR RANK XX CODE 16\$\$\$\$ <CR>

XX can be either rank designator OP, CP, SP, or IP.

\$ may be used with the code as a substitute for any other character

EXAMPLES OF FORMATS:

DIR RANK OP CODE 16AR6  
DIR RANK CP CODE Z100  
DIR RANK SP CODE M0&6 YEAR 1987  
DIR RANK IP CODE M1\$\$

Command example: MONITOR READY>DIRECTORY RANK IP <CR>

VARIATION K: DIRECTORY SINCE mm/dd/yy

---

FUNCTION: The system prints a directory of forms to which the user has access that contain action dates greater than or equal to the specified date.

---

Command example: MONITOR READY>DIRECTORY SINCE 04/01/83 <CR>

---

---

DIRECTORY (Continued)

---

VARIATION L: DIRECTORY YEAR fiscal year

---

FUNCTION: The system prints a list of forms to which the user has access that were prepared for the specified fiscal year.

---

Command example: MONITOR READY>DIRECTORY YEAR 84 <CR>

---

VARIATION M: DIRECTORY (keyword value) (keyword value)

---

FUNCTION: The system prints a list of forms to which the user has access that match the values of the specified keywords. A maximum of 3 keywords and their corresponding values can be entered.

---

Command example: MONITOR READY>DIRECTORY CATECODE 74068  
YEAR 88 <CR>

---

AVAILABLE TO

ALL

MONITOR READY COMMAND

---

DIR/F

---

AUTHORITY: N/A

FORMAT: DIRECTORY/F (keyword value) (keyword value) (keyword value)

PARAMTERS: keyword: value:

CATCODE 3 or 5 DIGIT CATEGORY CODE

COMMENT Comments made by a user.

FORM Form identification number assigned by the DD Form 1391 Processor.

INSTALLATION 'INSTALLATION'S NAME' -- The installation's name must be enclosed in single quotation marks (') if more than one word.

LOCATION Installation's location -- Specify only the state or the country. Cities are not accepted.

PROGRAM PROGRAM TYPE -- One of the following program types must be specified: MCA, PBS, NAF, AFH, M&R, COMM, or AAFES

PROJECT 3 or 5 DIGIT CATEGORY CODE

PROJNO or PN Permanent project number assigned by the DA Program Manager.

RANK RANK DESIGNATOR:

OP Program Manager Priority

CP Major Command's Priority

SP Major Subordinate Command's Priority

IP Installation's Priority



---

DIR/F (Continued)

---

SINCE DATE (mm/dd/yy)--each section must contain two digits.

YEAR 2 or 4 DIGIT FISCAL YEAR

NOTES: 1. The user can specify one of the following activity keywords and get a listing of the forms in his/her directory to which the specified activity has read or write access.

<u>Keyword</u>	<u>Value</u>
PM	Program Manager
MACOM	Major Command
MASCOM	Major Subordinate Command
DIV	Division
DIST	District

2. The following information is displayed for each form:

Note: A-I are displayed by the DIRECTORY command. (J-S are unique to the DIR/F command.)

A.	FY	Fiscal year
B.	CATCODE	Category code
C.	PROJECT DESCRIPTION	Project title in accordance with AR 415-28.
D.	PROJNO	Permanent project number assigned by the DA Program Manager.
E.	TEMPNO	Temporary project number assigned by the preparer.
F.	STATUS	Name of activity with the authority to modify the form.
G.	CHGDATE	Date the form was last

---

DIR/F (Continued)

---

- H. A User's current authority over the form.
- I. FORWARD Form identification number assigned by the DD Form 1391 Processor. An F, E, or T may be printed next to the form number.
1. An "F" next to the form number indicates Blocks 1-11 are frozen and cannot be accessed or modified.
  2. An "E" next to the form number indicates the DA Cost Reviewers (DAEN-ECE-S) have frozen Blocks 2.B, 2.C, and 9. The user cannot access or change these blocks.
  3. A "T" next to a form number indicates both the Program Manager (or MACOM/MASCOM) and the DA Cost Reviewers (DAEN-ECE-S) have issued the FREEZE command.
- J. O PRI Program Manager's priority rank code.
- K. C PRI Major Command's priority rank code.
- L. S PRI Major Subordinate Command's priority rank code.
- M. I PRI Installation's priority rank code.

---

DIR/F (Continued)

---

N. TC	Type of Construction--Permanent (P), Semi-permanent (S), Temporary (T).
O. WORK	Type of work (New, Addition, Alteration, etc.).
P. UM	Unit of Measure.
Q. SCOPE	Total Unit of Measure.
R. CWE (000)	Current Working Estimate.
S. INSTALLATION	Installation's name for which the form was prepared.

3. The DIR/F command provides users with the choice of printing the directory in two widths, 80 characters per line or 132 characters per line. If the 132-characters-width is selected, the information for each project will be formatted on one line. If the 80 characters width is selected, the information will be printed on two lines.

4. Users enter a maximum of three keywords and their corresponding values. Only the keywords RANK and PROJECT cannot be issued together.

5. The function of each command variation is explained. A system example is not given for each DIR/F format variation. To see an example of the directory displayed as a result of the command issued, the user is encouraged to simply enter the desired command variation at the MONITOR READY Prompt. All directories will be in the same format as presented in VARIATION A. The information provided will be limited dependent upon the command issued.

DIR/F (Continued)

VARIATION A: DIR/F

FUNCTION: The system prints a list of all forms to which the user has access.

EXAMPLE:

Command issued: MONITOR READY>DIR/F <CR>

Computer's response:

\*\*\*DO YOU WANT TO SET UP PRINTER FOR 132 CHARACTERS Y/N>N <CR>

03/25/86

\*\*\* FOR OFFICIAL USE ONLY \*\*\*

DIR/F

PAGE 1

FY CATCODE PROJECT DESCRIPTION PROJNO TEMPNO STATUS CHGDATE A FORMNO

O PRI C PRI C PRI S PRI I PRI TC WORK UM SCOPE CWE(000)

FORT EUROPE

GERMANY

84 72111 ENLISTED BARRACKS W/O DINING 36 T309 INST 03/20/83 W 3290E  
A001 P NEW PN 196058 205

84 72110 ENLISTED BARRACKS W/DINING 108 T480 INST 01/26/83 W 2084  
A004 P NEW PN 20000 104

FORT HUNTSVILLE

ALABAMA

85 72111 ENLISTED BARRACKS W/O DINING 45 T123 MACOM 02/17/83 R 2923F  
A006 P NEW PN 10000 744

86 74068 RECREATION CENTER 133 T1234 OCE 12/04/82 R 1970  
A002 P NEW SF 35000 28000

87 22690 BINARY MUNITIONS FACILITY 85 T856 INST 02/02/83 W 1706T  
A005 P NEW SF 23418 4069

88 51010 HOSPITAL 199 T3995 INST 03/12/83 P 1861  
A003 P NEW B0 5000 10607

END OF DIRECTORY..

---

DIR/F (Continued)

---

SUMMARY: The system listed all forms to which the user has access. Each form was listed under the name of the installation for which it was prepared. The "E" next to form number 4110 indicated Blocks 2.B, 2.C, and 8 and 9 were frozen by DA Cost Reviewers (DAEN-ECE-S). The "F" next to form number 2923 indicated Blocks 1-11 were frozen. The "T" next to form number 1706 indicated the FREEZE command was issued by the Program Manager (or the MACOM/MASCOM) and DAEN-ECE-S.

VARIATION B: DIR/F CATCODE category code

---

FUNCTION: The system prints a list of forms to which the user has access that were prepared for the specified category code.

---

Command example: MONITOR READY>DIR/F CATCODE 72111 <CR>

---

VARIATION C: DIR/F COMMENT SINCE mm/dd/yy

---

FUNCTION: The system prints a directory of forms on which comments have been made or revised since the specified date.

---

Command example: MONITOR READY>DIR/F COMMENT SINCE 03/25/83 <CR>

---

VARIATION D: DIR/F FORM formno

---

FUNCTION: The system prints a DIR/F listing of the specified form to which the user has access.

---

Command example: MONITOR READY>DIR/F FORM <CR>

---

---

DIR/F (Continued)

---

VARIATION E:    DIR/F INSTALLATION 'installation name'

---

FUNCTION: The system prints a list of forms to which the user has access that were prepared for the specified installation.

---

Command example:

MONITOR READY>DIRECTORY/F INSTALLATION 'FORT HUNTSVILLE' <CR>

---

VARIATION F:    DIR/F LOCATION location

---

FUNCTION: The system prints a list of all forms to which the user has access which were prepared for the specified location.

Note: Only a state or country other than the U.S. may be entered. The system will not accept the names of cities.

---

Command example:    MONITOR READY>DIR/F LOCATION ALABAMA <CR>

---

VARIATION G:    DIRECTORY/F PROGRAM program type (YEAR XX)  
                  (INST 'installation's name')

---

FUNCTION: The system prints a directory of the forms which contain the specified program type. The directory listing can be limited to forms for a certain year and/or activity if the year and/or activity is specified.

---

Command example:    MONITOR READY>DIRECTORY PROGRAM MCA  
                          YEAR 87 <CR>

---

VARIATION H:    DIR/F PROJECT category code

---

FUNCTION: The system prints a list of all forms on the system which contain the specified category code.

---

Command example:    MONITOR READY>DIRECTORY PROJECT 74068 <CR>

---

AD-A192 949

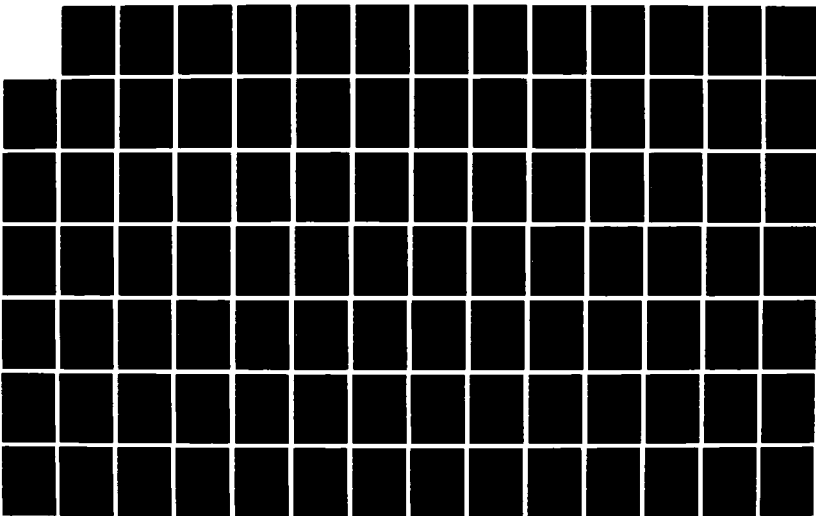
PAR ECONOPACK ECONOMIC ANALYSIS PACKAGE USERS MANUAL  
(U) ARMY ENGINEER DIV HUNTSVILLE AL H W HASON FEB 88  
HNDSP-86-117-ED-ES-REV

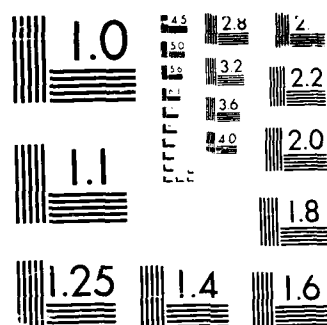
278

UNCLASSIFIED

F/G 5/3

NL





MICROCOPY RESOLUTION TEST CHART  
 1963-A



---

DIR/F (Continued)

---

VARIATION I:    DIRECTORY/F PROJNO (OR PN) projno

---

FUNCTION: The system prints a directory listing of the form to which the user has access that contains the specified permanent project number.

---

Command example:    MONITOR READY>DIR/F PN 133 <CR>

---

VARIATION J:    DIR/F RANK rank designator

---

FUNCTION: The system prints a DIR/F listing of all forms to which the user has access that have been assigned a priority rank code by the activity level indicated by the rank designator. These forms are sequenced according to the priority rank code.

NOTE: The keyword, CODE, may also be used with the DIR RANK command to cause the system to print a directory listing of the forms which have been ranked with the specified priority code. In the command format, the keyword, RANK, must precede the word, CODE. The keyword, CODE, may be used with other keywords such as CATCODE, INSTALLATION, LOCATION, etc.

---

SAMPLE FORMAT:    MONITOR READY>DIR/F RANK XX CODE 16\$\$\$\$ <CR>

XX can be either rank designator OP, CP, SP, or IP.

\$ may be used with the code as a substitute for any other character.

EXAMPLES OF FORMATS:

DIR/F RANK OP CODE 16AR6  
DIR/F RANK CP CODE Z100  
DIR/F RANK SP CODE M088 YEAR 1987  
DIR/F RANK IP CODE M1\$\$

Command example:    MONITOR READY>DIR/F RANK IP <CR>

---

DIR/F (Continued)

---

VARIATION K: DIR/F SINCE mm/dd/yy

---

FUNCTION: The system prints a directory of forms to which the user has access that contain action dates greater than or equal to the specified date.

---

Command example: MONITOR READY>DIR/F SINCE 03/01/83 <CR>

VARIATION L: DIR/F YEAR fiscal year

---

FUNCTION: The system prints a list of forms to which the user has access that were prepared for the specified fiscal year.

---

Command example: MONITOR READY>DIR/F YEAR 86 <CR>

The monitor ready command, DIP/W, allows users to see which activities have access to the forms in their directory and their corresponding authority levels. All variations of the monitor ready command, DIRECTORY, are applicable at this command. [See pages 4-45 through 4-52.]

AVAILABLE TO:

ALL

MONITOR READY COMMAND

---

DISPLAY

---

AUTHORITY: N/A

FORMAT: DISPLAY FORM formno (keyword) (nblock)

PARAMTERS: formno: Form identification number assigned by DD Form 1391 Processor.

keyword COMMENTS: Comments entered by a user.

HISTORY: Record of all changes to the form after it has been submitted.

REMARKS: Remarks entered by a user prior to 12/21/82. (The command which allowed users to enter remarks was removed from the system on 12/21/82.)

nblock: Block number(s) of contents to be displayed. Specific blocks must be separated by one blank space. Block ranges are indicated by two block numbers separated by a hyphen.

Specific block numbers

1	-	11.Q	Blocks
SA	-	SF	Supplemental Data
D1	-	D18	Justification Paragraphs
SR1	-	SR10	Special Requirements Paragraphs

- NOTES:
1. The form must be listed in the user's directory.
  2. Only one keyword may be specified.
  3. The user cannot modify any block when displaying the form.

---

DISPLAY (Continued)

---

4. All display printouts contain a heading that specifies the form number, the installation's name and location, the fiscal year, permanent project number, the dates entered at Block 2.A, the midpoint of construction date, and the Base Cost Index. If the display is of a form prepared for a foreign location, the foreign currency exchange rate used in the cost estimates is also displayed.
5. This command is very similar to the form editor command, /DISPLAY. However, there is one major difference. The monitor ready command, DISPLAY, prints the contents of the permanent copy of the specified form, whereas the form editor command, /DISPLAY, prints the contents of the working copy.

VARIATION A:    DISPLAY FORM formno

---

FUNCTION:    The system displays the content of the specified form. It begins with Block 1 and ends with SR10 (Special Requirements Paragraph 10).

---

EXAMPLE:

Command issued:    MONITOR READY>DISPLAY FORM 7213 <CR>

Computer's response:

```
***** DD 1391 PROCESSOR (03/10/86) *****
**          FOR OFFICIAL USE ONLY          ** FORM 7213

FORT EUROPE          GERMANY          FY = 1985  PROJNO = C26500
2.A DATE=18 JAN 83
  ASSUMED MIDPOINT OF CONSTRUCTION = 10/1985  COST INDEX = 1533

  FOREIGN CURRENCY EXCHANGE RATE: 2          MARK PER US $

1.  COMPONENT = ARMY
2.A  DATE = 30 NOV 81
2.B  FISCAL YEAR = 1986
2.C  ESTIMATED START DATE: 5/1986
      COST INDEX: 1560
      ESTIMATED END DATA: 5/1987
      MIDPOINT OF CONSTRUCTION: 11/1986
      COST INDEX: 1606
```

---

DISPLAY (Continued)

---

- 3.A INSTALLATION = FORT DRUM  
SUBPOST OR REMOTE LOCATION =  
3.B LOCATION = NEW YORK  
4.A PROJECT TITLE = BATTALION HQ AND CLASSROOM

(The system will continue to display the entire form.)

MONITOR READY>\_\_\_\_\_

Summary: Although this example does not show the entire form, the system would display all information entered for Form 7213, beginning with Block 1 and ending with SR10. (Notice this example displays the foreign currency exchange rate.)

VARIATION B: DISPLAY FORM formno nblock

---

FUNCTION 1: The system displays the contents of the specified block(s) on the specified form.

Notes: If the user specifies only a number, the system will display all blocks which begin with that number. For example, the command, DISPLAY FORM XXXX 9, displays Blocks 9.A - 9.E.

More than one block may be entered if separated by a blank space. For example, the command, DISPLAY FORM XXXX 6 8, will display Block 6 and Block 8.

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM 7213 6 8 <CR>

```
***** DD 1391 PROCESSOR (03/10/86) *****
          **      FOR OFFICIAL USE ONLY      ** FORM 7213
FORT HUNTSVILLE      Alabama      FY = 1985      PROJNO = C26500
2.A  DATE = 18 JAN 83
      ASSUMED MIDPOINT OF CONSTRUCTION = 10/1985 COST INDEX = 1533

6.    CATEGORY CODE NUMBER = 171 51
8.    PROJECT COST          = $    4,384,000
```

PREPARED BY = (PREPARER'S NAME) , (OFFICE) , (PHONE)  
REVISED BY = (REVIEWER'S NAME) , (OFFICE) , (PHONE)

Summary: The system displayed Blocks 6 and 8 of Form 7213.

---

DISPLAY (Continued)

---

---

FUNCTION 2: This system displays the contents of the range of blocks indicated on the specified form.

---

Note: The user must enter a hyphen between the numbers.

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM 7213 1-3 <CR>

Computer's response:

```
***** DD 1391 PROCESSOR (03/10/86) *****
          ** FOR OFFICIAL USE ONLY ** FORM 7213
FORT HUNTSVILLE Alabama FY= 1985 PROJNO = C26500
2.A DATE = 18 JAN 83
    ASSUMED MIDPOINT OF CONSTRUCTION= 10/1985 COST INDEX85 COST INDEX = 1533

1. COMPONENT = ARMY
2.A DATE = 30 NOV 81
2.B FISCAL YEAR = 1986
2.C ESTIMATED START DATE: 5/1986
    COST INDEX: 1560
    ESTIMATED END DATE: 5/1987
    COST INDEX: 1629
    MIDPOINT OF CONSTRUCTION: 11/1986
    COST INDEX: 1606
3.A INSTALLATION = FORM DRUM
    SUBPOST OR REMOTE LOCATION =
3.B LOCATION = New York
```

```
PREPARED BY = (PREPARER'S NAME) , (OFFICE) , (PHONE)
REVISED BY = (REVIEWER'S NAME) , (OFFICE) , (PHONE)
```

```
*****
Summary: The system displayed the contents of Blocks 1-3 of
Form 7213.
```

VARIATION C: DISPLAY FORM formno COMMENT (SINCE mm/dd/yy)

---

FUNCTION: The system displays all comments written for the specified form and indicates the activity response for each comment entered. If the parameters SINCE and a date are included in the command, the system only prints the comments made or revised on and/or after the date specified.

---

---

DISPLAY (Continued)

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM XXXX COMMENT <CR>

Computer's response:

\*\*\*\*\* DD 1391 PROCESSOR (03/10/86) \*\*\*\*\*  
\*\* FOR OFFICIAL USE ONLY \*\* FORM 7213  
FORT HUNTSVILLE Alabama FY = 1985 PROJNO = C26500  
2.A DATE = 18 JAN 83  
ASSUMED MIDPOINT OF CONSTRUCTION = 10/1985 COST INDEX = 1533

\*\*\*\*\* REVIEW COMMENTS FOR FORM 7213

FIELD NUMBER 1

REVIEW AGENCY (Name of MACOM) DATE 02/25/83  
THIS IS A TEST OF THE COMMENT FEATURE.  
COMMENTS ARE NOT A PART OF THE CONTENT OF THE FORM.

FIELD NUMBER 9.A

REVIEW AGENCY (Name of installation.) DATE 02/14/83  
COMMENTS MAY BE MADE BY  
ALL USERS WITH ACCESS TO THE FORM.

PREPARED BY = (PREPARER'S NAME) , (OFFICE) , (PHONE)  
REVISED BY = (REVIEWER'S NAME) , (OFFICE) , (PHONE)

\*\*\*\*\*

Summary: The system displayed all comments written for the  
form and identified the activity responsible for  
the comments entered.

VARIATION D: DISPLAY FORM formno REMARK

---

FUNCTION: The system displays all remarks entered by a user  
prior to 12/21/82.

---

---

DISPLAY (Continued)

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM 7213 REMARKS <CR>

Computer's response: Same as VARIATION C except remarks are displayed instead of comments.

Summary: The system displayed all remarks entered by a user prior to 12/21/82.

VARIATION E: DISPLAY FORM formno HISTORY (SINCE mm/dd/yy)

---

FUNCTION: The system displays a record of all changes made to the form after the authority to modify it is submitted by the installation. The display includes the date, the activity responsible, and the change. If SINCE with a date is included, the system displays the history of changes on or after the date specified.

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM 7213 HISTORY <CR>

Computer's response:

\*\*\*\*\* DD 1391 PROCESSOR (03/10/86) \*\*\*\*\*  
\*\* FOR OFFICIAL USE ONLY \*\* FORM 7213  
FORT HUNTSVILLE Alabama FY = 1985 PROJNO = C26500  
2.A DATE = 18 JAN 83  
ASSUMED MIDPOINT OF CONSTRUCTION = 10/1985 COST INDEX = 1533

\*\*\* HISTORY OF FIELD NUMBER 6

!  
11/30/81 (Name of MACOM)  
17151  
02/12/82 OCE  
171 50

PREPARED BY = (PREPARER'S NAME) , (OFFICE) , (PHONE)  
REVISED BY = (REVIEWER'S NAME) , (OFFICE) , (PHONE)

\*\*\*\*\*



---

DISPLAY (Continued)

---

Summary: The system displayed a record of all changes made to the form after the authority to modify it was submitted by the installation.

VARIATION F: DISPLAY FORM formno COMMENT nblock

---

FUNCTION: The system displays all comments entered at the specified blocks on the form designated by the command.

---

EXAMPLE:

Command issued: MONITOR READY>DISPLAY FORM XXXXX COMMENT 1 <CR>

Computer's response:

\*\*\*\*\* DD 1391 PROCESSOR (03/10/86) \*\*\*\*\*  
\*\* FOR OFFICIAL USE ONLY \*\* FORM 7213  
FORT HUNTSVILLE Alabama FY = 1985 PROJNO = C26500  
2.A DATE = 18 JAN 83  
ASSUMED MIDPOINT OF CONSTRUCTION = 10/1985 COST INDEX = 1533

\*\*\*\*\* REVIEW COMMENTS FOR FORM 1914

FIELD NUMBER 1

REVIEW AGENCY (Name of MACOM) DATE 02/25/83  
THIS IS A TEST OF THE COMMENT FEATURE.  
COMMENTS ARE NOT A PART OF THE CONTENT OF THE FORM.

REVIEW AGENCY (Name of installation.) DATE 02/14/83  
COMMENTS MAY BE MADE BY  
ALL USERS WITH ACCESS TO THE FORM.

PREPARED BY = (PREPARER'S NAME) , (OFFICE) , (PHONE)  
REVISED BY = (REVIEWER'S NAME) , (OFFICE) , (PHONE)

\*\*\*\*\*

Summary: The system displayed all comments entered at the specified blocks on the form indicated by the command.

The monitor ready command, EDIR, prints a directory of projects which contain Economic Analyses Reports in the system for which the user has access. This command uses the same keywords as the directory command, DIR. Users should consult pages 4-45 through 4-52 for further information.

The monitor ready command, QUIT, is used to terminate a session with the DD Form 1391 Processor. When the QUIT command is issued, the user is taken to a Time-of-Day prompt.

AVAILABLE TO:  
INSTALLATION

MONITOR READY COMMAND

---

SR1

---

AUTHORITY: S, R, V, OR W\*

FORMAT: SR1 FORM formno

PARAMTERS: formno: Form identification number assigned by the  
DD Form 1391 Processor System.

NOTES: Districts/Divisions and MACOMs/MASCOMs are allowed to  
use this command on forms they have prepared and have  
not yet transferred to an Installation.

---

FUNCTION: This command will load an Economic Analysis report  
from the monitor ready prompt.

Note: The report must have been generated from  
ECONPACK.

---

EXAMPLE:

Command issued: MONITOR READY>SR1 FORM XXXXX <CR>

Computer's response: PLEASE ENTER FILENAME OF ECONOMIC  
ANALYSIS TO BE ENTERED. (NOTE: AN  
ECONOMIC ANALYSIS REPORT MUST HAVE BEEN  
GENERATED FROM THE ECONPACK PROGRAM.)  
ENTER FILENAME OR <CR> TO RETURN TO THE  
MONITOR READY PROMPT.>TEST5 <CR>

YOUR ECONOMIC ANALYSIS WILL BE ENTERED  
INTO BLOCK SR1. DO YOU WISH TO CONTINUE  
(YES/NO)?>Y <CR>

PLEASE WAIT - THANK YOU

NOW PROCESSING YOUR INSTRUCTION...

NOW PROCESSING YOUR INSTRUCTION...

YOUR ECONOMIC ANALYSIS REPORT FILE HAS  
BEEN INSERTED INTO SR1 OF FORM XXXXX.

---

SR1 (Continued)

---

YOUR ECONOMIC ANALYSIS INPUT FILE HAS BEEN  
STORED AS XXXXX ON THE ECONPACK COMMON  
DIRECTORY.

MONITOR READY>\_\_\_\_\_

Summary:

The system loaded an Economic Analysis file  
named TEST5 into the specified form, plus  
stored a copy of the file on the Common  
Directory. All this was done without the user  
having to recall the form.

4.5 General Commands: ECONPACK users encounter two types of general commands: the /HELP command and the /QUIT command.

1. /HELP: Users may enter /HELP <CR> or /H <CR> at any prompt in the prompting mode for a message from ECONPACK as to the appropriate response for that particular prompt.
2. /QUIT: Users may enter /QUIT <CR> or /Q <CR> at any prompt in the prompting mode to terminate the routine. The system will prompt the user to indicate whether or not the input file is to be saved on the user's permanent disk.

## CHAPTER 5 MAIN ECONPACK MENU OPTIONS

### 5.0 MAIN ECONPACK MENU OPTIONS

5.1 Introduction: The purpose of this chapter is to introduce users to the MAIN ECONPACK MENU options and to explain the ECONPACK features available at each option.

To access ECONPACK, simply enter the number corresponding to the ECONPACK option on the PAX System Menu or enter ECONPACK <CR> at the DD Form 1391 Processor System Time-of-Day prompt. The MAIN ECONPACK MENU displayed depends upon whether the user is a DD Form 1391 Processor System user or not, as illustrated.

#### MAIN ECONPACK MENU FOR DD FORM 1391 SYSTEM PROCESSOR USERS:

##### \*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

#### MAIN ECONPACK MENU FOR NON-DD FORM 1391 PROCESSOR SYSTEM USERS:

##### \*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

A discussion of each menu item is presented in the following sections. Options 1-7 are the same regardless of whether the ECONPACK user is a DD Form 1391 Processor System user or not. Option 8 (DD Form 1391 Processor System users), Option 8 (non-DD Form 1391 Processor System users), and Option 9 (non-DD Form 1391 Processor System users) are discussed separately.

5.2 MAIN ECONPACK MENU Option 1: Create an Input File: This option allows the user to create the data file for an EA. ECONPACK, by a prompting routine, will ask for all the needed data. Chapter 6 discusses this aspect of ECONPACK in more detail.

The user selects Option 1 to form blocks of information which are used to perform the EA. These blocks are named below and their explanations are presented on the following pages:

1. Initial Information Block
2. Discussion of Assumptions Text Block
3. Discussion of Alternatives Text Block
4. Data Information Block
5. Alternative Information Block
6. Source/derivation of Costs and Benefits Text Block
7. Graphics Information Block
8. Sensitivity Analysis Information Block
9. Results and Recommendations Text Block

# INITIAL INFORMATION BLOCK

<u>COMPONENT</u>	<u>EXPLANATION</u>
1. Input Filename	1. Enter any combination of 1-8 letters, characters, and/or numbers.
2. Project Title	2. Enter a project title up to 48 characters long.
3. Action Officer	3. Enter the name, title, and phone number of the person to whom all questions about the analysis should be addressed. A maximum of 48 characters is allowed.
4. Organization Title	4. Enter the user's organization title. A maximum of 48 characters is allowed.
5. Objective of The Analysis	5. The objective is a clear, concise statement of why the project is being done. A maximum of 48 characters is allowed.



## Discussion of Assumptions Text Block

The second block of the input file is the Discussion of Assumptions Text Block. This block allows the user to comment on all assumptions pertinent to the economic analysis, such as the functional life of an asset, the usefulness of a facility after the present objective is fulfilled, etc. The user may enter as much narrative as desired in this text block and all text blocks.

Users may use the text editor commands, discussed in Chapter 4, to enter narrative in this block and all text blocks.

The system will type  
NEW FILE:  
E>\_\_\_\_\_

## Discussion of Alternatives Text Block

The third block of the input file is the Discussion of Alternatives Text Block. In this block, the analyst will identify all alternatives considered, explain why certain alternatives were rejected, and explain why particular alternatives were chosen to be part of the EA.

The system will type

NEW FILE:

E>\_\_\_\_\_

The fourth block of the input file is the Data Information Block. The components of this block, along with brief explanations of each, are displayed below.

#### DATA INFORMATION BLOCK

<u>COMPONENT</u>	<u>EXPLANATION</u>
1. Period of Analysis	1. The period of analysis is the number of years over which the alternatives' costs are compared. The period of analysis may be a maximum of 60 years. Enter one or two digits.
2. Start Year of the Analysis	2. The start year is the first year in which costs are incurred. Enter four digits (for example: 1988).
3. Base Year of the Analysis	3. The base year is the year to which all costs will be discounted. Enter four digits. Enter a <u>&lt;CR&gt;</u> to default to the start year.
4. Discount Rate	4. DoD policy requires a 10 percent discount rate for most military construction projects. To default to that rate, enter <u>&lt;CR&gt;</u> . If a rate other than 10 percent is desired, enter it as a percentage. (For example, 10 percent would be entered as 10.) [See the OCE Economic Briefs for more information on the discount rate.]

DATA INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
5. Global Discounting Convention	5. The global discounting convention allows the user to set the overall discounting convention for all expense items in all alternatives. The user is allowed to override the global discounting convention for individual expense items later in the prompting sequence. Enter <u>1 &lt;CR&gt;</u> for beginning-of-year, <u>2 &lt;CR&gt;</u> for middle-of-year, or <u>3 &lt;CR&gt;</u> for end-of-year. Enter a <u>&lt;CR&gt;</u> to default to the middle-of-year discounting convention.
6. Differential Inflation Index(es) (optional). If yes, 6.1 and 6.2 are required. If no, GOTO No. 7.	6. A differential inflation index allows the user to assign an inflation rate different from the inflation rate expected for the general economy. Enter <u>Y &lt;CR&gt;</u> or <u>N &lt;CR&gt;</u> .
6.1. Title(s) of Inflation Index(es)	6.1. Enter an identifying title. A maximum of 20 characters is allowed. The system allows a maximum of 10 inflation indexes.
6.2. Values for Inflation Index(es)	6.2. Enter inflation values as percentages. (For example, 1.1 percent would be entered as 1.1.) Negative values may be used if an inflation rate for an expense item is expected to be less than the inflation rate expected for the general economy. Enter an inflation value for each year in the period of analysis. The use of asterisks can abbreviate the input session. For example 1 1 2.1 2.1 4 can be entered as 2*1 2*2.1 4. The system allows for a maximum of 10 entries per line.

DATA INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
7. Residual Schedule(s) (optional). If yes, 7.1 and 7.2 are required. If no, GOTO No. 8.	7. A residual schedule is a series of residual values, one for each year in the period of analysis. Enter <u>Y &lt;CR&gt;</u> or <u>N &lt;CR&gt;</u> .
7.1. Title(s) of Residual Schedule(s)	7.1. Enter an identifying title. A maximum of 20 characters is allowed. The system allows a maximum of 10 residual schedules.
7.2. Residual Values	7.2. Enter a residual value (in decimal form) for each year in the period of analysis. Asterisks can abbreviate the input. For example, .98 .98 .96 .96 .92 can also be entered as 2*.98 2*.96 .92. The system allows for a maximum of 10 entries per line.
8. Type of Analysis (primary or secondary)	8. In a primary analysis, an alternative(s) is compared to an existing situation with the objective of saving money over a period of time. In a primary analysis, the status quo is the first alternative. In a secondary analysis, several alternatives are ranked from least cost to highest cost. The reason for doing a secondary analysis is that there is a new requirement. Enter <u>P &lt;CR&gt;</u> for a primary analysis or <u>S &lt;CR&gt;</u> for a secondary analysis.
9. Alternative Cost Input Method	9. Enter <u>1 &lt;CR&gt;</u> if \$1 = \$1. Enter <u>2 &lt;CR&gt;</u> if \$1 = \$1,000. Enter <u>3 &lt;CR&gt;</u> if \$1 = \$1,000,000.

The fifth block of the input file is the Alternative Information Block. If the analyst is performing a primary analysis, the first alternative described should be the status quo alternative (present alternative) and subsequent alternatives should be proposed alternatives.

The components of the Alternative Information Block, along with brief explanations of each component, are displayed below.

#### ALTERNATIVE INFORMATION BLOCK

<u>COMPONENT</u>	<u>EXPLANATION</u>
1. Name of Alternative	1. Enter the alternative name, up to 20 characters long. Up to 20 alternatives may be identified.
2. Descriptive Title of Alternative	2. Enter the alternative title, up to 2 lines of 48 characters each. When the descriptive title is complete, enter a <u>&lt;CR&gt;</u> at the next prompt.
3. Economic Life of Alternative	3. The economic life is the period of time over which the benefits from an alternative are expected to accrue. The economic life may be limited by its mission life or its physical life. The economic lives for alternatives need not be equal. A maximum of two digits is allowed.
4. Titles for Expense Items	4. Expense items are costs for each alternative. They can be negative, reflecting an influx of funds. Enter a title of up to 3 lines with a maximum of 12 characters per line. The title may be entered on one line if a colon is used to separate each line.

ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
5. Costs for Expense Items	5. Costs must be numbers such as 25000 and may contain a decimal point (such as 25000.). Enter a cost for each year in the period of analysis. Use of asterisks can abbreviate the input. For example: \$25,000 cost for 3 years and \$30,000 for the next 2 years can be input as 25000 25000 25000 30000 30000 or as 3*25000 2*30000. A maximum of 10 entries may be made on one line. Do not use dollar signs or commas.
6. Expense item to which a differential inflation index is applied (optional). If yes, 6.1 is required. If no, GOTO No. 7.	6. Costs may be assigned an inflation index other than no inflation. Enter the integer corresponding to the expense item.
6.1. Number of Differential Inflation Index	6.1. Enter the integer corresponding to the desired differential inflation index (created in the Data Information Block).
7. Expense item to which a special discounting convention is assigned (optional). If yes, 7.1 is required. If no, GOTO No. 8.	7. Costs may be assigned a discounting convention other than the global discounting convention specified in the Data Information Block. Enter the integer corresponding to the expense item for which a change is desired.
7.1. Special Discounting Convention	7.1. Enter <u>1</u> <CR> for beginning-of year, <u>2</u> <CR> for middle-of-year, or <u>3</u> <CR> for end-of-year.

ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
8. Decision as to whether to include a salvage value/residual schedule (optional). If yes, 8.1 is required. If no, GOTO No. 10.	8. A salvage/residual value is the value of the alternative at some point in time, usually at the end of the period of analysis. If a salvage/residual value is desired, enter <u>Y &lt;CR&gt;</u> ; if not, enter <u>N &lt;CR&gt;</u> .
8.1. If a salvage value/residual schedule is appropriate, decision as to whether a one-time value or a residual schedule should be used. If a salvage value is used, 8.2 is required. If a residual schedule is used, 9 is required.	8.1. Enter <u>1 &lt;CR&gt;</u> if the salvage value occurs at the end of the period of analysis. Enter <u>2 &lt;CR&gt;</u> if a residual schedule should be used (as opposed to a salvage value).
8.2. Net Terminal Value (if salvage value method was selected). GOTO No. 10.	8.2. Enter the salvage value of the asset. If it is a cost (requiring an expenditure to remove), enter it as a negative value.
9. Selection of a residual schedule, if user feels a residual schedule is in order (instead of a one-time value). Options are straight line (SL), declining balance (DB), or user specified (US). If SL, 9.2, 9.3, 9.4, 9.6, and 9.7 are requested. If DB, 9.2, 9.3, 9.4, 9.5, 9.6, and 9.7 are requested. If US, 9.2, 9.6, and 9.7 are requested.	9. Enter <u>1 &lt;CR&gt;</u> for straight line, <u>2 &lt;CR&gt;</u> for declining balance, or <u>3 &lt;CR&gt;</u> for user specified (defined in the Data Information Block).
9.1. Residual Schedule Number (optional)	9.1. Enter the integer corresponding to the appropriate residual schedule (defined in the Data Information Block).



ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
9.2. Residual Start Value (optional)	9.2. Enter the original value of the asset.
9.3. Residual Life (optional)	9.3. Enter the number of years over which the residual schedule will depreciate the worth of the asset. <u>&lt;CR&gt;</u> defaults to the economic life, which is usually appropriate unless the residual life is specified by statute or public life.
9.4. Starting Year of the Residual (optional)	9.4. Enter the first year the residual calculations begin. This usually corresponds to the year construction is completed.
9.5. Residual Rate (optional)	9.5. Enter the rate at which the residual is to decline (in percentage terms).
9.6 Residual Inflation Index (optional)	9.6. Enter integer corresponding to proper inflation index (defined in Data Information Block).
9.7 Residual Discounting Convention (optional)	9.7. Enter <u>1 &lt;CR&gt;</u> for beginning-of year, <u>2 &lt;CR&gt;</u> for middle-of-year, or <u>3 &lt;CR&gt;</u> for end-of-year. Entering <u>&lt;CR&gt;</u> causes ECONPACK to default to the end-of-year discounting convention.
<hr/> If this is a secondary analysis, GOTO No. 15. <hr/>	
10. Recurring Costs (relevant for status quo or proposed alternative--primary); optional	10. Enter integer(s) corresponding to expense item(s) which occur periodically, usually annually.

ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>COMPONENT</u>	<u>EXPLANATION</u>
11. Refurbishment Costs (relevant for status quo alternative--primary)	11. Enter integer(s) corresponding to expense item(s) required to make an existing facility usable for the mission.
12. Investment Costs (relevant for proposed alternative--primary)	12. Enter integer(s) corresponding to expense item(s) required to implement the proposed alternative.
13. Inherited Assets (relevant for proposed alternative--primary)	13. Enter integer(s) corresponding to expense item(s) which are existing assets to be used as part of a proposed alternative.
14. Replaced Assets (relevant for proposed alternative--primary)	14. Enter integer(s) corresponding to expense item(s) which are existing items that will be replaced due to the alternative.
15. Return to No. 1 for next alternative.	15. The foregoing procedure is required for each alternative in the EA.

## Source/Derivation of Costs and Benefits Text Block

The sixth block of an input file is the Source/deviation of Costs and Benefits Text Block. This feature allows the analyst to document sources for costs, discuss benefits of alternatives which, although important, are not appropriate for inclusion in the EA, etc.

The system will type  
NEW FILE:  
E>\_\_\_\_\_

The seventh block of the input file is the Graphics Information Block. The component of this block, along with its description, is displayed below.

#### GRAPHICS INFORMATION BLOCK

<u>COMPONENT</u>	<u>EXPLANATION</u>
1. Alternative numbers to be graphed	1. Enter integer(s) corresponding to alternative(s) to be graphed on the same line, such as 1 2 3. A maximum of 6 alternatives may be graphed. The system allows for 4 separate graphs.

The eighth block of the input file is the Sensitivity Analysis Information Block. The components of that block, along with an explanation of each component, are displayed below.

#### SENSITIVITY ANALYSIS INFORMATION BLOCK

<u>COMPONENT</u>	<u>EXPLANATION</u>
1. Title of sensitivity analysis	1. Normally, the title should reflect what costs are being varied. A maximum of 60 characters is allowed and <u>must be entered on one line.</u>
2. Two alternatives to be included in the sensitivity analysis.	2. Enter integers corresponding to the appropriate alternatives. Enter data on one line.
3. Expense item(s) to be changed for Alternative A	3. Enter the integer(s) corresponding to the appropriate expense item(s). Enter <u>&lt;CR&gt;</u> to continue to the next prompt. Enter <u>DEL &lt;CR&gt;</u> to delete all expense items.
4. Expense item(s) to be changed for Alternative B	4. Enter the integer(s) corresponding to the appropriate expense item(s). Enter <u>&lt;CR&gt;</u> to continue to the next prompt. Enter <u>DEL &lt;CR&gt;</u> to delete all expense items.
5. Upper limit of change	5. Enter upper limit as a percent. (E.g., enter 30 for 30%.) Enter <u>&lt;CR&gt;</u> to default to 200%.
6. Alternative to be ranked as least cost	6. Enter the integer corresponding to the alternative that is to be ranked as least cost. Obviously this alternative must have been designated as one of the two alternatives to be included in the sensitivity analysis.

## Results and Recommendations Text Block

The ninth and final block of the input file is the Results and Recommendation Text Block. Here, the analyst provides a commentary on the outcome of the EA and makes an appropriate recommendation, based on that outcome.

The system will type

NEW FILE:

E>\_\_\_\_\_

After all blocks are completed, the system asks the user if the file is to be saved. If the user answers "Yes", the system asks if economic analysis reports are to be generated. If the answer is "Yes", the system displays the Available ECONPACK Reports Menu and prompts for which reports are to be printed. (This menu will be discussed subsequently.) If the user answers "No", the system returns to the MAIN ECONPACK MENU. The next section of this chapter explains how to add to or change an existing (previously created) input file.

5.3 MAIN ECONPACK MENU Option 2: Add to or Change an Existing Input File: Once an input file is created and saved, it is possible to update and/or change all data. MAIN ECONPACK MENU Option 2 allows the user to select the block(s) to change and then prompts for detailed changes. [Note: The modified file must be saved and economic analysis reports must be generated from the modified file in order for the changes to become a part of the permanent disk.]

Before Option 2 from the MAIN ECONPACK MENU can be used, the name of the file the user wishes to change must be known.

If the user wishes to review all existing input filenames, MAIN ECONPACK MENU Option 6, File Maintenance, should be utilized. Section 5.7 explains the appropriate steps.

If the user already knows the name, these steps should be followed:

1. Select Option 2 from the MAIN ECONPACK MENU.
2. Enter the appropriate filename when prompted.
3. Select the desired option from the Add to or Change An Existing Input File Menu. (See below.)

Once the filename is entered, ECONPACK displays the following Change Menu so the user can select which block(s) to modify:

**\*\* CHANGE MENU \*\***

1. CHANGE THE INITIAL INFORMATION
2. CHANGE THE DISCUSSION OF ASSUMPTIONS TEXT
3. CHANGE THE DISCUSSION OF ALTERNATIVES TEXT
4. CHANGE THE DATA INFORMATION
5. CHANGE THE ALTERNATIVE INFORMATION
6. CHANGE THE SOURCE/DERIVATION OF COSTS AND BENEFITS TEXT
7. CHANGE THE GRAPHICS INFORMATION
8. CHANGE THE SENSITIVITY ANALYSIS INFORMATION
9. CHANGE THE RESULTS AND RECOMMENDATIONS TEXT
10. CHANGE ALL INFORMATION
11. QUIT THE CHANGE MENU

ENTER DESIRED OPTION: \_\_\_\_\_

MAIN ECONPACK MENU OPTION 2:  
ADD TO OR CHANGE AN EXISTING INPUT FILE

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
1. CHANGE THE INITIAL INFORMATION	<p>1. Displays the menu below, allowing the user to change individual parts of the block, change the entire block, print the entire block, or return to the Change Menu.</p> <p>** INITIAL INFORMATION MENU**</p> <p>1. CHANGE THE PROJECT TITLE 2. CHANGE THE ACTION OFFICER INFORMATION 3. CHANGE THE ORGANIZATION TITLE 4. CHANGE THE OBJECTIVE OF THE ANALYSIS 5. CHANGE ALL INITIAL INFORMATION 6. PRINT THE INITIAL INFORMATION 7. QUIT THE INITIAL INFORMATION MENU</p>
2. CHANGE THE DISCUSSION OF ASSUMPTIONS TEXT	<p>2. Allows the user to add to, delete, or change the assumptions made for fulfilling the objective of the project. This block is unlimited in space.</p> <p>The system will type the top line of the existing file or NEW FILE: E&gt; _____</p>
3. CHANGE THE DISCUSSION OF ALTERNATIVES TEXT	<p>3. Allows the user to add to, delete, or change the discussion of alternatives considered and why some alternatives were ruled infeasible and not considered. This block is unlimited in space.</p> <p>The system will type the top line of the existing file or NEW FILE: E&gt; _____</p>



MAIN ECONPACK MENU OPTION 2:  
ADD TO OR CHANGE AN EXISTING INPUT FILE  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
4. CHANGE THE DATA INFORMATION	<p>4. Displays the menu below, allowing the user to change individual parts of the block, change the entire block, print the entire block, or return to the Change Menu.</p> <p>***DATA INFORMATION MENU**</p> <ol style="list-style-type: none"><li>1. CHANGE THE PERIOD OF ANALYSIS</li><li>2. CHANGE THE START YEAR</li><li>3. CHANGE THE BASE YEAR</li><li>4. CHANGE THE DISCOUNT RATE</li><li>5. CHANGE THE GLOBAL DISCOUNTING CONVENTION</li><li>6. CHANGE THE DIFFERENTIAL INFLATION INDEX INFORMATION</li><li>7. CHANGE THE RESIDUAL SCHEDULE INFORMATION</li><li>8. CHANGE THE TYPE OF ANALYSIS</li><li>9. CHANGE THE COST INPUT METHOD</li><li>10. CHANGE ALL DATA INFORMATION</li><li>11. PRINT THE DATA INFORMATION</li><li>12. QUIT THE DATA INFORMATION MENU</li></ol>
5. CHANGE THE ALTERNATIVE INFORMATION	<p>5. Displays the menu below, allowing the user to change, for each alternative, individual parts of the block, change the entire block, print the entire block, or return to the Change Menu:</p> <p>*ALTERNATIVE INFORMATION MENU*</p> <ol style="list-style-type: none"><li>1. CHANGE ALTERNATIVE NAME</li><li>2. CHANGE ALTERNATIVE DESCRIPTION</li><li>3. CHANGE ECONOMIC LIFE</li><li>4. CHANGE EXPENSE ITEM INFORMATION</li></ol>

MAIN ECONPACK MENU OPTION 2:  
ADD TO OR CHANGE AN EXISTING INPUT FILE  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
5. CHANGE THE ALTERNATIVE INFORMATION (Continued)	5. 5. CHANGE RESIDUAL (SALVAGE) VALUE INFORMATION 6. CHANGE EXPENSE ITEM CATEGORIZATION INFORMATION (PRIMARY ANALYSIS ONLY) 7. CHANGE ALL ALTERNATIVE INFORMATION 8. PRINT THE ALTERNATIVE INFORMATION 9. QUIT THE ALTERNATIVE INFORMATION MENU
6. CHANGE THE SOURCE/ DERIVATION OF COSTS AND BENEFITS TEXT	6. Allows the user to add to, delete, or change the discussion of the sources and deviations of the cost and benefits data used in the EA. This block is unlimited in space.  The system will type the top line of the existing file or NEW FILE: E>_____
7. CHANGE THE GRAPHICS INFORMATION	7. Allows the user to add, change, or delete graphics information.
8. CHANGE THE SENSITIVITY ANALYSIS INFORMATION	8. Allows the user to add, change, or delete components of the Sensitivity Analysis Information Block.  Components of this block include:  A. Which alternatives are included B. Which expense items are to be changed C. The limits on the changes D. Which alternative is to be ranked least cost

MAIN ECONPACK MENU OPTION 2:  
ADD TO OR CHANGE AN EXISTING INPUT FILE  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
9. CHANGE THE RESULTS AND RECOMMENDATIONS TEXT	<p>9. Allows the user to add to, delete, or change the discussion concerning the preferred alternative. This block is unlimited in space.</p> <p>The system will type the top line of the existing file or NEW FILE: E&gt;_____</p>
10. CHANGE ALL INFORMATION	<p>10. Allows the user to change each information block in the order below:</p> <ul style="list-style-type: none"><li>A. Initial Information</li><li>B. Discussion of Assumptions Text</li><li>C. Discussion of Alternatives Text</li><li>D. Data Information</li><li>E. Alternative Information</li><li>F. Source/derivation of Cost and Benefits Text</li><li>G. Graphics Information</li><li>H. Sensitivity Analysis Information</li><li>I. Results and Recommendations Text</li></ul>
11. QUIT THE CHANGE MENU	<p>11. Asks user if the editing session is to be saved and asks if reports are to be generated. If reports are to be generated, asks which reports are to be printed (after generation takes place). If the user does not wish to generate economic analysis reports, the system returns to the MAIN ECONPACK MENU.</p>

5.4 MAIN ECONPACK MENU Option 3: Generate Economic Analysis Reports: This option should be selected when the user is ready to actually perform the EA. A successful EA will take between 2 and 3 minutes per 100 lines of output.

To use Option 3, the steps below should be followed:

1. Select Option 3 from the MAIN ECONPACK MENU.
2. Enter the input filename when prompted.
3. Select the desired ECONPACK report. (See below.)

5.5 MAIN ECONPACK MENU Option 4: Print Economic Analysis Reports: This option allows the user to choose which report(s) from a specified input file to print. When Option 4 is selected, the following menu appears (after the appropriate input filename is entered):

AVAILABLE ECONPACK REPORTS

1. PRINT ALL REPORTS
2. PRINT EXECUTIVE SUMMARY OF ANALYSIS
3. PRINT COMPARISON PLOTS
4. PRINT LIFE CYCLE COST COMPARISON REPORTS
5. PRINT SENSITIVITY ANALYSIS REPORTS
6. PRINT INPUT LISTING
7. RETURN TO MAIN MENU ECONPACK MENU

ENTER DESIRED OPTIONS>\_\_\_\_\_

Each option is now briefly described.

MAIN ECONPACK MENU OPTION 4:  
PRINT ECONOMIC ANALYSIS REPORTS

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
1. PRINT ALL REPORTS	1. Prints executive summary of analysis, comparison plots, life cycle cost comparison reports, sensitivity analysis reports, and input listings.
2. PRINT EXECUTIVE SUMMARY OF ANALYSIS	2. Prints data information, assumptions of the analysis, discussion of alternatives, and, for each alternative, the following values: net present value, equivalent uniform annual cost, and, if a primary analysis, prints the savings to investment ratio and discounted payback period.
3. PRINT COMPARISON PLOTS	3. Prints a plot of the cumulative net present value, over the period of analysis, for each alternative graphed.
4. PRINT LIFE CYCLE COST COMPARISON REPORTS	4. Prints each expense item, by year, by alternative. For each alternative, prints the cumulative present value, present value residual, and cumulative net present value, by year; prints the equivalent uniform annual cost by alternative; prints the discount rate used, number of years in the period of analysis, and the inflation index number used for each expense item. If primary analysis, prints recurring annual operations costs for the present alternative and the proposed alternative(s), differential costs, present value of differential costs, total present value of investment, present value of existing assets to be used, present value of existing assets replaced, present value of terminal value of alternative, total present value of net investment,

MAIN ECONPACK MENU OPTION 4:  
PRINT ECONOMIC ANALYSIS REPORTS  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
4. PRINT LIFE CYCLE COST COMPARISON REPORTS (Continued)	4. present value of cost refurbishment or modification eliminated, status quo salvage value, total present value of savings, savings/investment ratio, and discounted payback period. Prints Source/derivation of Costs and Benefits Text Block and Results and Recommendations Text Block.
5. PRINT SENSITIVITY ANALYSIS REPORTS	5. Prints the sensitivity analysis number, title, allowable change, objective, initial ranking (before variable is manipulated), expense item for each alternative to be manipulated, net present value of each alternative, table of percent changes where alternatives' NPVs are equal, and percent change required to reverse the initial ranking.
6. PRINT INPUT LISTING	6. Prints the input file, line by line.
7. RETURN TO MAIN ECONPACK MENU	7. Returns the user to the MAIN ECONPACK MENU.

5.6 MAIN ECONPACK MENU Option 5: Check Manual Input File for Errors: This option allows the user to check an existing input file (whose name must be known) for syntax errors. Errors, by block, will be listed. This option should only be used when data was entered by the file input mode, not when it was entered via the terminal prompting mode. This function does not check the accuracy of data entered.

5.7 MAIN ECONPACK MENU Option 6: File Maintenance: Option 6 permits the user to perform various manipulations on the input files and report files stored on the ECONPACK permanent disk, as indicated by the menu shown below:

\*\*\* FILE MAINTENANCE MENU \*\*\*

1. PRINT DIRECTORY OF FILES
2. DUPLICATE INPUT FILE
3. RENAME EXISTING INPUT FILE AND REPORTS
4. ERASE EXISTING INPUT FILE AND REPORTS
5. TRANSMIT INPUT FILES TO OTHER USERS
6. RECEIVE INPUT FILES FROM OTHER USERS
7. RETURN TO MAIN ECONPACK MENU

ENTER DESIRED OPTION>\_\_\_\_\_

Each menu option, along with its explanation, is displayed below:

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
1. PRINT DIRECTORY OF FILES	<p>1. If ECONPACK is accessed by a DD Form 1391 Processor System user, the directory below is displayed when Option 1 from the File Maintenance Menu is selected.</p> <p><b>**DIRECTORY OF FILES OPTIONS**</b></p> <ol style="list-style-type: none"><li>1. PRINT DIRECTORY OF YOUR WORKING FILES</li><li>2. PRINT DIRECTORY OF YOUR DD1391 FORMS CONTAINING ECONPACK REPORTS</li><li>3. PRINT DIRECTORY OF ALL DD1391 FORMS CONTAINING ECONPACK REPORTS</li><li>4. PRINT DIRECTORY OF ARCHIVED ECONPACK INPUT FILES</li><li>5. PRINT DIRECTORY OF EXAMPLE ECONPACK INPUT FILES</li><li>6. RETURN TO FILE MAINTENANCE MENU</li></ol>



MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
1. PRINT DIRECTORY OF FILES (Continued)	<p>1. The options just listed command ECONPACK to perform the following tasks:</p> <ol style="list-style-type: none"><li>1. Print a directory of files from user's permanent disk</li><li>2. Print a directory of user's DD1391 forms which contain ECONPACK reports</li><li>3. Print a directory of all DD1391 forms which contain ECONPACK reports</li><li>4. Print a directory of archived ECONPACK files</li><li>5. Print a directory of OCE-preferred-form files (suitable for examples)</li><li>6. Return user to the File Maintenance Menu</li></ol> <p>IF 2 OR 3, PLEASE ENTER DIRECTORY TYPE (DIR, DIR/F, DIR/W) AND OPTIONS:&gt;_____</p> <p>[Users may identify specific keywords and values to direct the computer to find specific types of input files. If users wish to copy a file from Options 2, 3, 4, or 5, they must use Option 2 on the File Maintenance Menu and enter the DD1391 Form Number for the existing filename. Users may consult Chapter 4 for further explanations of these commands.]</p>

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
1. PRINT DIRECTORY OF FILES (Continued)	1. If ECONPACK is accessed by a non-DD Form 1391 Processor System user, Option 1 causes the system to simply display a directory of input files and a directory of report files stored on the user's permanent disk.
2. DUPLICATE INPUT FILE	2. Permits the user to create a new input file by copying and renaming an existing input file.  This option is particularly useful to those who wish to manipulate an input file, changing variables to see "what if." Exercising this option allows the original file to remain intact and relieves the user of the necessity of remembering the changes made in order to restore the file to its original condition.  Files may be located on either the user's permanent disk or on the ECONPACK Common Directory (Options 2, 3, 4, or 5 of the Directory Options).

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
2. DUPLICATE INPUT FILE (Continued)	<p>EXAMPLE:</p> <p>****FILE MAINTENANCE MENU ***</p> <ol style="list-style-type: none"><li>1. PRINT DIRECTORY OF FILES</li><li>2. DUPLICATE INPUT FILE</li><li>3. RENAME EXISTING FILE AND REPORT</li><li>4. ERASE EXISTING FILE AND REPORT</li><li>5. TRANSMIT INPUT FILES TO OTHER USERS</li><li>6. RECEIVE INPUT FILES FROM OTHER USERS</li><li>7. RETURN TO MAIN ECONPACK MENU</li></ol> <p>ENTER DESIRED OPTION&gt;2 &lt;CR&gt;</p> <p>ENTER PRESENT INPUT FILE NAME&gt; &lt;CR&gt; TO EXIT&gt;JASMINE2 &lt;CR&gt;</p> <p>ENTER NEW INPUT FILE NAME&gt;JASMINE3 &lt;CR&gt; JASMINE3 INPUT FILE CREATED ON 10/27/87</p> <p>ANY OTHER INPUT FILES TO BE DUPLICATED (Y/N)?&gt;N &lt;CR&gt;</p>
2.1. COPYING AN INPUT FILE FROM THE COMMON DIRECTORY [This option is available only to users who accessed ECONPACK from within the DD Form 1391 Processor System.]	<p>2.1. Instructions for duplicating an input file differ, depending upon whether the file was created by the current user or by another user. If the file was created by the current user, the following instructions are appropriate:</p> <p>A. Access the Common Directory by utilizing Option 1 from the Directory of Files Options Menu and identify the filename to be copied.</p>

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
2.1. COPYING AN INPUT FILE FROM THE COMMON DIRECTORY (Continued)	<p>B. Exit the Directory of Files Options Menu by executing Option 6. The system will return the user to the File Maintenance Menu.</p> <p>C. At the File Maintenance Menu, execute Option 2. The system will prompt the user for the present filename and a new input filename. At this prompt, users should enter their DD1391 Form numbers. The system will then create the new file on the user's permanent disk.</p> <p>D. Change the new input file as desired by utilizing Option 2 from the MAIN ECONPACK MENU, Add to or Change an Existing Input File.</p> <p>E. Generate new ECONPACK reports.</p> <p>F. Transfer the new report file to the DD1391 Form in the same manner as before. The system will erase the old ECONPACK input file from the Common Directory, replacing it with the new input file.</p>

If the user who wishes to duplicate the file is not the person who originally created that file, the following directions should be followed:

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
2.1. COPYING AN INPUT FILE FROM THE COMMON DIRECTORY (Continued)	A. Follow Items A and B just described on pages 5-30 through 5-31. B. At the File Maintenance Menu, execute Option 7. The system will return the user to the MAIN ECONPACK MENU. C. At the MAIN ECONPACK MENU, execute Option 2, Add to or Change an Existing Input File. D. Change the input file as desired. E. Generate new ECONPACK reports. F. Users may then transfer the modified ECONPACK report file to Special Requirements Paragraph #1, using the procedures in Chapter 8 of this manual.
3. RENAME EXISTING FILE AND REPORTS	3. Allows user to rename an existing input file and its corollary report file simultaneously. After execution, the old filename will no longer appear in the directory, but will be replaced by the new filename.

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
3. RENAME EXISTING FILE AND REPORTS (Continued)	<p>EXAMPLE:</p> <p>****FILE MAINTENANCE MENU ***</p> <ol style="list-style-type: none"><li>1. PRINT DIRECTORY OF FILES</li><li>2. DUPLICATE INPUT FILE</li><li>3. RENAME EXISTING FILE AND REPORT</li><li>4. ERASE EXISTING FILE AND REPORT</li><li>5. TRANSMIT INPUT FILES TO OTHER USERS</li><li>6. RECEIVE INPUT FILES FROM OTHER USERS</li><li>7. RETURN TO MAIN ECONPACK MENU</li></ol> <p>ENTER DESIRED OPTION&gt;<u>3</u> &lt;CR&gt;</p> <p>ENTER PRESENT INPUT FILE NAME&gt; &lt;CR&gt; TO EXIT &gt;<u>JASMINE3</u> &lt;CR&gt;</p> <p>ENTER NEW INPUT FILE NAME&gt;<u>JASMINE4</u> &lt;CR&gt; JASMINE4 INPUT FILE CREATED ON 10/27/87</p>
4. ERASE EXISTING FILE AND REPORT	<p>4. Presents the following menu:</p> <p>**ERASE OPTIONS **</p> <ol style="list-style-type: none"><li>1. ERASE REPORTS ONLY</li><li>2. ERASE INPUT FILE AND REPORTS</li><li>3. RETURN TO FILE MAINTENANCE MENU</li></ol> <p>ENTER DESIRED OPTION&gt;_____</p> <p>Option 1 allows the user to erase unwanted files listed in the report file directory.</p> <p>Option 2 allows the user to erase unwanted files listed in the input file directory and their corresponding report files simultaneously.</p> <p>Option 3 or <u>/QUIT</u> &lt;CR&gt; returns user to the File Maintenance Menu.</p>

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
5. TRANSMIT INPUT FILES TO OTHER USERS	5. Allows the user to transmit a copy of an input file to the permanent disk of another user. The PAX System User ID of the intended receiver must be known. The sender of the input file is asked if a copy of the input file should be saved on his/her permanent disk.

EXAMPLE:

\*\*\*\*FILE MAINTENANCE MENU \*\*\*

1. PRINT DIRECTORY OF FILES
2. DUPLICATE INPUT FILE
3. RENAME EXISTING FILE AND REPORT
4. ERASE EXISTING FILE AND REPORT
5. TRANSMIT INPUT FILES TO OTHER  
USERS
6. RECEIVE INPUT FILES FROM OTHER  
USERS
7. RETURN TO MAIN ECONPACK MENU

ENTER DESIRED OPTION>5 <CR>

ENTER PRESENT INPUT FILE NAME>  
JASMINE <CR>

ENTER OTHER USER'S PAX USERID?> BIRD  
<CR>

DO YOU WANT TO SAVE A COPY OF YOUR FILES  
(Y/N)?>Y <CR>

SENDING FILE TO BIRD ON 10/27/87

DO YOU WISH TO SEND ANOTHER FILE (Y/N)?  
>N <CR>

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
6. RECEIVE INPUT FILES FROM OTHER USERS	6. Allows the user to receive one or more input files from another user. The user is notified in the "Welcome to ECONPACK" message that one or more transmit files are waiting. Option 6 of the File Maintenance Menu allows the user to receive the file, delete the file, or quit. If the transmit file is received, it may become a part of the user's permanent disk and is listed in the user's input file directory. The user is given the option of renaming the received file(s).

EXAMPLE OF NOTICE:

\*\*\*WELCOME TO THE ECONPACK SYSTEM!  
\*\*\*VERSION 3.1 (14 JULY 1987)

IDENTIFICATION: [Enter your System  
IDENT word.]

YOU HAVE JUST ENTERED ECONPACK AS:

\*\*\* SYSTEM NOTICE \*\*\*

\*\*USERID BIRD HAS 1 TRANSMIT FILES  
WAITING \*\*\*



MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
6. RECEIVE INPUT FILES FROM OTHER USERS (Continued)	6. EXAMPLE OF HOW TO RECEIVE A FILE:  ****FILE MAINTENANCE MENU ***  1. PRINT DIRECTORY OF FILES 2. DUPLICATE INPUT FILE 3. RENAME EXISTING FILE AND REPORT 4. ERASE EXISTING FILE AND REPORT 5. TRANSMIT INPUT FILES TO OTHER USERS 6. RECEIVE INPUT FILES FROM OTHER USERS 7. RETURN TO MAIN ECONPACK MENU

ENTER DESIRED OPTION>6 <CR>

THE FOLLOWING INPUT FILE(S) HAVE BEEN  
SENT TO YOU FROM USER ID BIRD:  
FILENAME SIZE

TEST 121

DO YOU WANT TO RECEIVE A FILE, DELETE A  
FILE, OR QUIT? (R/D/QUIT) >R <CR>

WHICH FILE NAME DO YOU WISH TO RECEIVE?  
>TEST <CR>

DO YOU WISH TO RENAME THE FILE?  
>N <CR>

FILE, TEST FT75F001, HAS BEEN PLACED ON  
YOUR A DISK

[Your A disk is another name for your  
permanent disk.]

MAIN ECONPACK MENU OPTION 6:  
FILE MAINTENANCE MENU  
(Continued)

<u>OPTION NUMBER</u>	<u>EXPLANATION</u>
7. RETURN TO MAIN ECONPACK MENU	7. Returns the user to the MAIN ECONPACK MENU.

5.8 MAIN ECONPACK MENU Option 7: HELP Facility: This option produces a menu which allows the user to get help for several categories. The items on the HELP Facility Menu change periodically. However, typical items include the ECONPACK newsletter, OCE Economic Briefs, ECONPACK general information, etc. The last item on the menu is always Return to MAIN ECONPACK MENU.

5.9 MAIN ECONPACK MENU Option 8 (DD Form 1391 Processor System Users): Exit to DD1391 Processor System: This option returns the user to a Time-of-Day prompt within the DD Form 1391 Processor System. Information on the Time-of-Day prompt is provided in Chapter 4.

5.9.1 MAIN ECONPACK MENU Option 8 (Non-DD Form 1391 Processor System Users): CMS: This option transfers the user to the Conversational Monitoring System. Information on CMS is provided in Chapter 4.

5.10 MAIN ECONPACK MENU Option 9 (Non-DD Form 1391 System Users): Exit to PAX Menu: Option 9 returns the user to the PAX System Menu. An example PAX System Menu contains the following items:

EXAMPLE:

1. ECONPACK
2. PAXMAIL
3. CAPCES
4. PRINT NEWSLETTER
5. CHANGE PASSWORD

PLEASE ENTER --- 1 THRU 5 OR LOG

At the PAX prompt, LOG <CR> should be entered if the user is ready to end the computer session. The communications connection should then be terminated. The user may also enter another option number to access a different PAX option.

## CHAPTER 6

### TERMINAL PROMPTING MODE

#### 6.0 TERMINAL PROMPTING MODE

6.1 Introduction: This chapter is for analysts who wish to use the prompting mode rather than the file input mode. Knowledge of creating a file using text editor commands is unnecessary.

6.2 General: Three sample interactive sessions in which files are created are given in this chapter. The analyst must organize the input data so that it is readily available when ECONPACK requests it. The following paragraphs correspond to the nine blocks in the input file. Familiarity with this structure will enable the user to organize his/her data and notes prior to an actual inputting session.

1. The Initial Information Block includes the project title, the name, title, phone number, and organization of the action officer, and the objective of the analysis.
2. The Discussion of Assumptions Text Block allows the user to discuss all assumptions considered for fulfilling the objective of the project. This block is unlimited for space.
3. The Discussion of Alternatives Text Block allows the user to discuss all alternatives that were considered to fulfill this requirement and the reasons why some alternatives were considered infeasible for performing a life-cycle cost analysis.
4. The Data Information Block includes the period of analysis, start year, base year, discount rate, global discounting convention, inflation indexes, residual schedules, type of analysis (primary or secondary), and cost input method.
5. The Alternative Information Block includes all of the costing data for all alternatives in the analysis.
6. The Source/derivation of Costs and Benefits Text Block allows the user to discuss the sources and derivations for the costs and benefits data used in the analysis. The user should also discuss what those benefits are and how important each benefit is for the fulfillment of the mission.
7. The Graphics Information Block includes which alternatives are to be graphed.

8. The Sensitivity Analysis Information Block includes (for each sensitivity analysis) which alternatives are in the sensitivity analysis, which expense items are to be changed, the limits on the changes, and which alternative is to be ranked least cost.
9. The Results and Recommendations Text Block allows the user to discuss the preferred alternatives.

For a more detailed explanation of the structure and components of the input file, the user may benefit from a review of pages 5-6 through 5-16. The user should be aware that not all of the requested information is required for report generation. For example, the sensitivity analysis information and the results and recommendations text are normally added after initial report generation.

6.3 Case Studies: Secondary Economic Analysis: The examples in the succeeding sections demonstrate use of ECONPACK to interactively input files for the performance of economic analyses.

6.3.1 Officers' Quarters: The analyst lists the following information for easy reference when using ECONPACK:

Requirement - To provide 95,000 square feet of unaccompanied officer housing. There are two alternatives: construct a new facility or modify an existing building.

Project Title - Officers' Quarters

Action Officer - James R. Spindle, Master Planner,  
(202) 555-1212

Organization Title - DEH, Fort Alice

Objective of the Analysis - Provide 95,000 square feet of unaccompanied officer housing.

Period of Analysis - 27 years. Construction is assumed to take 2 years; half of the units will be available at the end of 1 year and beneficial occupancy for the remaining units will occur after 2 years. Modification of an existing facility (renovation) is expected to take only one year.

Start Year - 1987 (first year in which costs are incurred)

Base Year - 1987 (year to which all costs are converted to present value amounts)

Discount Rate - 10%

Costs - entered in actual dollars

Alternative 1 - New Construction

Initial Construction Cost - 2\*3,250,000 25\*0  
Maintenance and Repair - 0 26,471 25\*52,942  
Utilities - 0 25,175 25\*50350  
New Roof in Year 15, HVAC in Year 20 -  
14\*0 855,000 4\*0 1,170,000 7\*0  
Salvage Value - 2,600,000 (at the end of Year 27)

Alternative 2 - Modification

Renovation Upgrade - 5,890,000 26\*0  
Upgrade in Year 15 (Roof), Year 20 (HVAC) -  
14\*0 855,000 4\*0 1,060,200 7\*0  
Maintenance and Repair - 0 26\*123,500  
Utilities - 0 26\*82,650  
Demolition - 252,700 (at the end of the Year 27)

Graphics - plot both alternatives

[The prompting session for this case is displayed on pages 6-7 through 6-23.]

6.3.2 Panama Housing: The analyst lists the following information for easy reference when using ECONPACK:

Requirement - To provide housing for 500 families. There are four alternatives: lease housing through the Republic of Panama, build to lease, MCA construction, or purchase trailers/relocatable units.

Project Title - Panama Housing

Action Officer - Bob N.

Organization Title - USA - CERL

Objective of the Analysis - Determine the least cost method of housing 500 families.

Start Year - 1985

Base Year - 1985

Discount Rate - 8.6%

Costs - entered in thousands of dollars (\$1 = \$1,000)

Inflation Indexes - Inflation Index 1:  
15\*7 (7% differential inflation)  
- Inflation Index 2:  
15\*5 (5% differential inflation)

Alternative 1 - Build to Lease

Allowances - 4,350 1,450 13\*0  
Lease Rent - 1,005 3,015 13\*4,020  
Services - 12 36 13\*48  
Utilities - 442 1,327 13\*1,770  
Maintenance - 141 423 13\*564  
Furniture and Equipment - 187.6 562.9 750.5 12\*138  
Restoration - 5\*0 117 353 8\*94  
[Differential Inflation Index 2 is assigned to all  
7 expense items in this alternative.]

Alternative 2 - MCA Construction

Allowances - 2\*5,800 13\*0  
Design and Construction - 21,538.4 14,406 13\*0  
Utilities - 2\*0 13\*1,758  
Maintenance and Repair - 2\*0 13\*540  
Furniture and Equipment - 2\*0 380 12\*120  
Services - 2\*0 13\*378  
[Differential Inflation Index 1 is assigned to the  
"Allowance" and "Design and Construction" expense  
items; Differential Inflation Index 2 is assigned  
to each of the remaining expense items.]

Alternative 3 - Trailer/Relocatable Units

Allowances - 5,800 14\*0  
Design and Construction - 22,473.6 14\*0  
Services - 0 14\*378  
Utilities - 0 14\*1,608  
Maintenance and Repair - 0 10\*540 4\*792  
Furniture and Equipment - 0 505 13\*120  
[Differential Inflation Index 1 is assigned to the  
"Design and Construction" expense item;  
Differential Inflation Index 2 is assigned to  
each of the remaining expense items.]

NOTE: Preliminary consideration was given to leasing housing through the Republic of Panama as a possible alternative for meeting the project objective. It was determined prior to the performance of the economic analysis that this approach was not viable, and, therefore, leasing through the Republic of Panama is not included as an alternative. Notice that this information is, however, included in the Alternatives Information Text Block.

Graphics - plot all three alternatives

Sensitivity Analysis - There are two sensitivity analyses

Sensitivity Analysis 1 - Test Changes in Construction Costs

- Alternative 2 and 3 included
- Alternative 2, change "Design and Construction" Costs
- Alternative 3, change "Design and Construction" Costs
- Upper limit of the change = 200%
- Rank Alternative 2 as least cost

Sensitivity Analysis 2 - Increase of "M&R" Costs for Alternative 3 vs. Next Lowest Cost Alternative (#2)

- Alternatives 2 and 3 included
- Alternative 2, no change in expense items
- Alternative 3, change "Maintenance and Repair" Costs
- Upper limit of the change = 50%
- Rank Alternative 2 as least cost

6.4 Case Study: Primary Economic Analysis: The analyst lists the following information for easy reference when using ECONPACK:

Project Title - Consolidated Maintenance Facility

Action Officer - Bernice Ellis

Organization - DEH, Fort Bowie

Objective - Provide 210,000 square feet of maintenance shops

Period of Analysis - 25 years. There are 2 alternative means of meeting the objective: upgrading the current facility or constructing a new facility. It will take 2 years to upgrade the existing facility; upgrading will also require acquisition of equipment and training during the first year. The equipment will need to be replaced in the 12th year.

A new facility will take 3 years to construct.

Start Year - 1989

Base Year - 1989

Discount Rate - 10% (using mid-year discounting convention)

Inflation - None

Cost - Entered in actual dollars

Alternative 1 (Status Quo) - Upgrade Status Quo

Initial Upgrade - 2\*4,823,675 23\*0

Equipment - 3,540,684 10\*0 3,540,684 13\*0

Training - 25,000 24\*0



Annual M&R - 4\*62,960 21\*251,835  
Annual Utilities - 25\*178,012  
Personnel Cost - 25\*9,301,600  
MHE Fuel - 25\*5,000  
Depot Transport Cost - 25\*103,443  
Vehicle Usage - 25\*26,440  
Equipment Maintenance - 0 24\*297,283

[The first 3 expense items are refurbishment costs; the remaining expense items are recurring costs.]

Salvage Value - None

Alternative 2 (Proposed) - New Construction

Initial Construction Cost - 3\*9,000,000 22\*0  
Equipment - 0 2\*3,123,275 10\*0 2\*3,123,275 10\*0  
Training - 0 2\*25,000 22\*0  
Annual M&R - 3\*62,960 22\*234,668  
Annual Utilities - 3\*178,012 22\*242,030  
Personnel - 3\*9,201,600 22\*5,699,175  
MHE Fuel - 3\*5,000 22\*1,800  
Vehicle Usage - 3\*26,440 22\*14,730  
Equipment Maintenance - 3\*297,283 22\*312,570

[The first 3 expense items are new costs, the remaining expense items are recurring costs.]

Salvage Value - 17,453,984

Graphics - None

Sensitivity Analysis - None

[Users may consult Appendix D for the output generated from these three case studies.]

CASE STUDY: OFFICERS' QUARTERS

COMPUTER'S RESPONSE: PLEASE ENTER YOUR INPUT FILE NAME  
(8 CHARACTERS MAX)

USER'S RESPONSE: >FTALICE <CR>

NOTES: The filename can be any combination of 8 or less letters/characters/symbols. If the user supplies an input filename which already exists, the system will notify the user and allow the user to enter a new filename. The system will assign the file a filetype.

COMPUTER'S RESPONSE: ENTER THE PROJECT TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >OFFICERS' QUARTERS <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME, TITLE, AND PHONE NUMBER OF  
THE ACTION OFFICER (48 CHARACTERS MAX):

USER'S RESPONSE: >JAMES R. SPINDLE, MASTER PLANNER, (202) 555-1212 <C

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ORGANIZATION TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >DEH, FORT ALICE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE OBJECTIVE OF THE ANALYSIS  
(48 CHARACTERS MAX):

USER'S RESPONSE:

>PROVIDE 95000 SF OF UNACCOMPANIED OFFICER HOUSING <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE INITIAL INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL ASSUMPTIONS FOR THIS ECONOMIC  
ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I <CR>  
I>Construction is assumed to take 2 years.<CR>  
I>Half of the units will be available in <CR>  
I>1988, and beneficial occupancy for the <CR>  
I>remaining units will occur in 1989. <CR>  
I> <CR>  
I>Renovation is expected to take only one <CR>  
I>year.<CR>  
I><CR>  
E>FILE <CR>

NOTES: At the E>, enter I <CR> to enter the input mode.  
Enter as much narrative as desired. To skip a  
line, press the space bar before entering the  
<CR>. When the narrative section is complete,  
enter a <CR> at the last I>. The system will  
return to the edit mode (E>). At the E>, type  
FILE <CR>. The system will save the file and  
advance to the next prompt.

COMPUTER'S RESPONSE: DISCUSS ALL ALTERNATIVES CONSIDERED FOR  
THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE:

E>I <CR>

I>New Construction - this alternative will provide the <CR>  
I>required 95,000 sf of unaccompanied officer housing. <CR>

I><CR>

I>Modification - an existing, unoccupied administrative <CR>

I>facility will be renovated to provide the necessary <CR>

I>95,000 sf of housing for unaccompanied officers. <CR>

I><CR>

I>Status Quo Operations - this is a new mission <CR>

I>requirement. There are no facilities available to <CR>

I>accommodate this increase in troop strength. <CR>

I><CR>

I>Pay BAO/VHA - this alternative was eliminated from <CR>

I>further evaluation due to the absence of housing <CR>

I>available in the vicinity of Fort Alice. The closest <CR>

I>town is 87 miles away. Winter conditions preclude <CR>

I>commuting from this distance for 4 months of the <CR>

I>year. Most importantly, mission requirements, due to <CR>

I>the early deployment requirement, preclude this unit <CR>

I>from being billeted off-post. <CR>

I><CR>

I>Lease - No existing facilities are available for <CR>

I>lease within a 100-mile radius of the installation. <CR>

I>The mission requirements of this unit (as discussed <CR>

I>above) prevent this alternative from being feasible. <CR>

I><CR>

E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE PERIOD OF ANALYSIS  
(60 YEARS MAX):

USER'S RESPONSE: >27 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE START YEAR OF THE ANALYSIS  
(4 CHARACTERS REQUIRED):

USER'S RESPONSE: >1987 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE BASE YEAR OF THE ANALYSIS  
(<CR> TO DEFAULT TO THE START YEAR):

USER'S RESPONSE: ><CR>

NOTES: 1987 is accepted as the base year.

COMPUTER'S RESPONSE: ENTER THE DISCOUNT RATE  
(<CR> TO DEFAULT TO 10%):

USER'S RESPONSE: ><CR>

NOTES: ECONPACK uses a 10 percent discount rate  
unless user indicates otherwise at this  
prompt.

COMPUTER'S RESPONSE: ENTER THE GLOBAL DISCOUNTING CONVENTION  
(<CR> TO DEFAULT TO 2): (1 = BEGINNING OF  
YEAR, 2 = MIDDLE OF YEAR, 3 = END OF YEAR)

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO ADD A DIFFERENTIAL INFLATION INDEX (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: Enter Y for "yes" or N for "no."

COMPUTER'S RESPONSE: DO YOU WISH TO ADD A RESIDUAL SCHEDULE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ANALYSIS TYPE PRIMARY OR SECONDARY (P/S):

USER'S RESPONSE: >S <CR>

NOTES: Enter P for "primary" or S for "secondary."

COMPUTER'S RESPONSE: PLEASE SELECT ALTERNATIVE COST INPUT METHOD.

1. AS ENTERED (DEFAULT)
2. IN THOUSANDS OF DOLLARS (\$1 = \$1,000)
3. IN MILLIONS OF DOLLARS (\$1 = \$1,000,000)

PLEASE ENTER CHOICE:

USER'S RESPONSE: ><CR>

NOTES: The cost input method selected at this prompt applies to all expense items for all alternatives.

COMPUTER'S RESPONSE: THIS COMPLETES THE DATA INFORMATION BLOCK.  
ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 1  
(20 CHARACTERS MAX):

USER'S RESPONSE: >NEW CONSTRUCTION <CR>

NOTES: A maximum of 20 alternatives is allowed.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 1  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE:

>PERMANENT CONSTRUCTION OF UNACCOMPANIED <CR>  
>OFFICER QUARTERS (95000 SF) <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 1  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: >27 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >INITIAL <CR>  
>CONSTRUCTION <CR>  
>COST <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*3250000 25\*0 <CR>

NOTES: Enter a cost for each year in the period of analysis. Do not use dollar signs or commas. Construction will last two years for this alternative.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MAINTENANCE <CR>  
>AND <CR>  
>REPAIR <CR>

NOTES:

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 26471 25\*52942 <CR>

NOTES:

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UTILITIES <CR>  
><CR>

NOTES: If three lines are not needed, enter a <CR> to go to the next prompt.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 25175 25\*50350 <CR>

NOTES: None.



COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >NEW ROOF <CR>  
>IN YR 15 <CR>  
>HVAC YR 20 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >14\*0 855000 4\*0 1170000 7\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 1 has only 4 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE (RESIDUAL)  
VALUE (Y/N)

USER'S RESPONSE: >Y <CR>

NOTES: None.

COMPUTER'S RESPONSE: SELECT  
1. ONE TIME (AT THE END OF THE PERIOD OF  
ANALYSIS)  
2. USE RESIDUAL SCHEDULE

USER'S RESPONSE: >1 <CR>

NOTES: Whatever method chosen should be used for  
all alternatives.

COMPUTER'S RESPONSE: ENTER THE SALVAGE VALUE:

USER'S RESPONSE: >2600000 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF ALTERNATIVE 1.  
ENTER ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 2  
(20 CHARACTERS MAX):

USER'S RESPONSE: >MODIFICATION <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 2  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE:

>MODIFY AN EXISTING FACILITY TO PROVIDE 95000 SF OF <CR>  
>UNACCOMPANIED OFFICERS' QUARTERS <CR>

NOTES:

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 2  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF CHARACTERS MAX):

NOTES:

USER'S RESPONSE: >RENOVATION <CR>  
>UPGRADE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >5890000 26\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UPGRADE IN <CR>  
>YEAR 15 ROOF <CR>  
>YEAR 20 HVAC <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >14\*0 855000 4\*0 1060200 7\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MAINTENANCE <CR>  
>AND <CR>  
>REPAIR <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 26\*123500 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 26\*82650 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX)

USER'S RESPONSE: >DEMOLITION <CR>  
>COST <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >26\*0 252700 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 2 has only 5 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION (<CR> TO  
EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE (RESIDUAL)  
VALUE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF ALTERNATIVE 2.  
(ENTER ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 3  
(20 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: This EA has only 2 alternatives.

COMPUTER'S RESPONSE: THIS COMPLETES THE ALTERNATIVE INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL SOURCES AND DERIVATIONS OF YOUR  
COSTS AND BENEFITS FOR THIS ECONOMIC  
ANALYSIS:

NEW FILE:

USER'S RESPONSE:

E>I <CR>  
I>NEW CONSTRUCTION <CR>  
I>Initial investment was determined to be \$74.00/sf, <CR>  
I>per 415-17. Maintenance and repair estimates were <CR>  
I>obtained from FY86 Tech Data Reports. These <CR>  
I>costs were inflated to FY87 by OSD/OMB inflation <CR>  
I>indexes as follows:<CR>  
I>\$.54/sf x 95,000 sf = \$51,300 <CR>  
I>\$51,300 x 1.032 (Inflation) = \$52,942 <CR>  
I>Utility costs are based on DEH historical records <CR>  
I>@ .53 per sf. Roof replacement and HVAC <CR>  
I>replacement were included in Years 15 and 20,<CR>  
I>respectively. Roof estimates for both <CR>  
I>alternatives were developed as follows:<CR>  
I>\$9.00 per sf x 95,000 sf = \$855,000. <CR>  
I>HVAC was assumed to be 18% of initial <CR>  
I>construction/renovation costs. A residual value <CR>  
I>for the facility was estimated to be 40% of <CR>  
I>initial construction costs. <CR>  
I><CR>  
E>FILE <CR>



USER'S RESPONSE:  
(Continued)

I><u>MODIFICATION <CR>  
I><u>Renovation costs were estimated to be <CR>  
I><u>\$62.00 per sf. Maintenance and repair <CR>  
I><u>estimates were obtained from <CR>  
I><u>historical records as follows:<CR>  
I><u>\$1.30/sf x 95,000 sf = \$123,500. <CR>  
I><u>Utilities estimates were also <CR>  
I><u>obtained from historical records as <CR>  
I><u>follows: \$.87/sf x 95,000 sf = \$82,650. <CR>  
I><u>A one-time upgrade in Year 20 is <CR>  
I><u>included to reflect overhaul of HVAC <CR>  
I><u>and a new roof. Demolition costs for <CR>  
I><u>the facility were estimated to be <CR>  
I><u>\$2.66 per sf. <CR>  
I><u><CR>  
E><u>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBERS FOR GRAPH 1  
(<CR> TO EXIT):

USER'S RESPONSE: ><u>1 2 <CR>

NOTES: Up to 6 alternatives may be graphed.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBERS FOR GRAPH  
NUMBER 2 (<CR> TO EXIT):

USER'S RESPONSE: ><u><CR>

NOTES: ECONPACK allows up to 4 graphs.

COMPUTER'S RESPONSE: THIS COMPLETES THE GRAPHICS INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT/REDO  
(A/C/P/R):

USER'S RESPONSE: ><u>A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF SENSITIVITY ANALYSIS  
NUMBER 1 (60 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: ECONPACK allows up to 30 sensitivity  
analyses per EA. For this particular EA,  
the analyst decided a sensitivity analysis  
was unnecessary.

COMPUTER'S RESPONSE: DISCUSS ALL RESULTS AND RECOMMENDATIONS FOR  
THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE:

E>I <CR>  
I>The new construction alternative is the <CR>  
I>least cost alternative and recommended to <CR>  
I>provide the required 95,000 sf. In <CR>  
I>addition to the quantitative advantages, <CR>  
I>the new construction alternative offers <CR>  
I>a higher ranking of non-monetary <CR>  
I>considerations as follows:  
I> <CR>

	I> <u>MODIFICATION</u>	NEW CONSTRUCTION <CR>
I> <u>&lt;CR&gt;</u>		
I> <u>Morale</u>	fair	high <CR>
I> <u>Displine</u>	fair	very good <CR>
I> <u>Re-enlistment</u>	fair	high <CR>
I> <u>Readiness</u>	fair	excellent <CR>
I> <u>Traffic Accidents</u>	fair	excellent <CR>
I> <u>(lost time) &lt;CR&gt;</u>		
I> <u>Community Relations</u>	fair	excellent <CR>
I> <u>&lt;CR&gt;</u>		
E> <u>FILE &lt;CR&gt;</u>		

NOTES: None.

COMPUTER'S RESPONSE: YOUR FTALICE INPUT FILE HAS BEEN SAVED.  
DO YOU WISH TO GENERATE ECONOMIC ANALYSIS  
REPORTS (Y OR N)?

USER'S RESPONSE: >Y <CR>

NOTES: If user responds "no," ECONPACK asks if the  
input file is to be saved. After  
responding to that question, the user is  
taken back to the MAIN ECONPACK MENU.

CASE STUDY: PANAMA HOUSING

COMPUTER'S RESPONSE: PLEASE ENTER YOUR INPUT FILE NAME  
(8 CHARACTERS MAX)

USER'S RESPONSE: >PANAMA <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE PROJECT TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >PANAMA HOUSING <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME, TITLE, AND PHONE NUMBER OF  
THE ACTION OFFICER (48 CHARACTERS MAX):

USER'S RESPONSE: >BOB N. <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ORGANIZATION TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >USA - CERL <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE OBJECTIVE OF THE ANALYSIS  
(48 CHARACTERS MAX):

USER'S RESPONSE:>DETERMINE LEAST COST METHOD OF HOUSING 500 FAM <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE INITIAL INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL ASSUMPTIONS FOR THIS ECONOMIC  
ANALYSIS:

NEW FILE:

USER'S RESPONSE:

E>>I <CR>

I>>For the conventional MCA construction <CR>

I>>alternative (#2), it is assumed that there will <CR>

I>>be no payment made by the Republic of Panama <CR>

I>>upon the transfer of the property in 1999. <CR>

I>> <CR>

I>>For the trailer/relocatable building alternative (#3), <CR>

I>>it is assumed that the housing will be <CR>

I>>transferred to the Republic of Panama in the <CR>

I>>Year 2000. There is no anticipated payment by the <CR>

I>>Republic of Panama. <CR>

I>> <CR>

I>>Beneficial occupancy for all alternatives will occur <CR>

I>>in 1987. Lease units will be located on privately- <CR>

I>>owned land. <CR>

I>><CR>

E>>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL ALTERNATIVES CONSIDERED FOR THIS ECONOMIC ANALYSIS:

NEW FILE

USER'S RESPONSE: E>I <CR>  
I>Four alternatives were initially <CR>  
I>considered to meet the requirement <CR>  
I>of housing 500 families. These are <CR>  
I> <CR>  
I>1. Lease housing through the Republic <CR>  
I>of Panama. The Army would enter <CR>  
I>into an agreement to lease 500 units <CR>  
I>from the Republic of Panama. <CR>  
I>Discussions were conducted between <CR>  
I>the U.S. Army and the Government of <CR>  
I>Panama in June 1984. This <CR>  
I>alternative was determined to be <CR>  
I>infeasible and is, therefore, <CR>  
I>eliminated from further consideration <CR>  
I> <CR>  
I>2. Build housing to lease. Five <CR>  
I>hundred housing units will be <CR>  
I>constructed to U.S. Army <CR>  
I>specifications by a private developer <CR>  
I>and leased to the Army. <CR>  
I> <CR>  
I>3. Construct 500 on-post housing <CR>  
I>units through the MCA program. <CR>  
I> <CR>  
I>4. Purchase trailers/relocatable <CR>  
I>units. <CR>  
I> <CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE PERIOD OF ANALYSIS  
(60 YEARS MAX):

USER'S RESPONSE: >15 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE START YEAR OF THE ANALYSIS  
(4 CHARACTERS REQUIRED):

USER'S RESPONSE: >1985 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE BASE YEAR OF THE ANALYSIS  
(<CR> TO DEFAULT TO THE START YEAR):

USER'S RESPONSE: ><CR>

NOTES: 1985 is accepted as the base year.

COMPUTER'S RESPONSE: ENTER THE DISCOUNT RATE  
(<CR> TO DEFAULT TO 10%):

USER'S RESPONSE: >8.6 <CR>

NOTES: User wishes to override the 10% discount rate.

USER'S RESPONSE: ENTER THE GLOBAL DISCOUNTING CONVENTION  
(<CR> TO DEFAULT TO 2): (1 = BEGINNING OF YEAR, 2 = MIDDLE OF YEAR, 3 = END OF YEAR)

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO ADD A DIFFERENTIAL INFLATION INDEX (Y/N)?

USER'S RESPONSE: >Y <CR>

NOTES: ECONPACK allows up to 10 inflation indexes.

COMPUTER'S RESPONSE: ENTER THE TITLE OF INFLATION INDEX 1  
(20 CHARACTERS MAX):

USER'S RESPONSE: >MOBILE PROJECTION <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE VALUES (%) FOR INFLATION INDEX 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >15\*7 <CR>

NOTES: Enter a value for each year in the period of  
analysis.

COMPUTER'S RESPONSE: ENTER THE TITLE OF INFLATION INDEX 2  
(20 CHARACTERS MAX):

USER'S RESPONSE: >OSD GENERAL <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE VALUES (%) FOR INFLATION INDEX 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >15\*5 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF INFLATION INDEX 3  
(20 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Only 2 inflation indexes were needed for  
this EA.

COMPUTER'S RESPONSE: ENTER THE ANALYSIS TYPE PRIMARY OR  
SECONDARY (P/S):

USER'S RESPONSE: >S <CR>

NOTES: None.

COMPUTER'S RESPONSE: PLEASE SELECT ALTERNATIVE COST INPUT METHOD:

1. AS ENTERED (DEFAULT)
2. IN THOUSANDS OF DOLLARS (\$1 = \$1,000)
3. IN MILLIONS OF DOLLARS (\$1 = \$1,000,000)

PLEASE ENTER CHOICE:

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DATA INFORMATION BLOCK.  
ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.



COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 1  
(20 CHARACTERS MAX):

USER'S RESPONSE: >BUILD TO LEASE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 1  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE: >BUILD HOUSING TO LEASE <CR>  
><CR>

NOTES: If 2 lines are not needed, enter <CR> to go  
to the next prompt.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 1  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: >15 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ALLOWANCES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >4350 1450 13\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >LEASE <CR>  
>RENT <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >1005 3015 13\*4020 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >SERVICES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >12 36 13\*48

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >442 1327 13\*1770

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MAINTENANCE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >141 423 13\*564 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >FURNITURE <CR>  
>EQUIPMENT <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 6  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >187.6 562.9 750.5 12\*138 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 7  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSES: >RESTORATION <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 7  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >5\*0 117 353 8\*94 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 8  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Attenuation 1 has only 7 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 1  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: This inflation index was created in the Data  
Information Block.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSES: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 2  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 3  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >4 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 4  
(<CR>) DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >5 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 5 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >6 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 6 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >7 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 7 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION (<CR> TO  
EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE CATEGORIZATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE (RESIDUAL)  
VALUE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF ALTERNATIVE 1.  
ENTER ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 2  
(20 CHARACTERS MAX):

USER'S RESPONSE: >MCA CONSTRUCTION <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 2  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE: >CONVENTIONAL MCA CONSTRUCTION <CR>  
>NO PAYMENT BY ROP UPON TRANSFER OF PROPERTY <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 2  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: >15 <CR>

NOTES: None.



COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ALLOWANCES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*5800 13\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >DESIGN <CR>  
>AND <CR>  
>CONSTRUCTION <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >21538.4 14406 13\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*0 13\*1758 <CR>.

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MAINTENANCE <CR>  
>AND <CR>  
>REPAIR <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*0 13\*540 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >FURNITURE <CR>  
>AND <CR>  
>EQUIPMENT <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*0 380 12\*120 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >SERVICES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 6  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*0 13\*378 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 7  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 2 has only 6 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 1 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 2  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 3  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >4 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 4  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >5 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 5 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: >6 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 6  
(<CR>) DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER COMPLETES THE IDENTIFICATION OF  
EXPENSE ITEMS. ENTER ACCEPT/CHANGE/PRINT  
(A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE (RESIDUAL  
VALUE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF  
ALTERNATIVE 2.  
ENTER ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 3  
(20 CHARACTERS MAX):

USER'S RESPONSE: >TRAILER/RELOCATABLE UNITS <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 3  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE: >TRAILER/RELOCATABLE UNITS CONSTRUCTED <CR>  
>ON LAND AREAS UNDER U.S. CONTROL <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 3  
(<C?> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: >15 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ALLOWANCES <CR>  
><CR>

NOTES: None.

COMPUTERS RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >5800 14\*0 <CR>

NOTES: None.



AD-A192 949

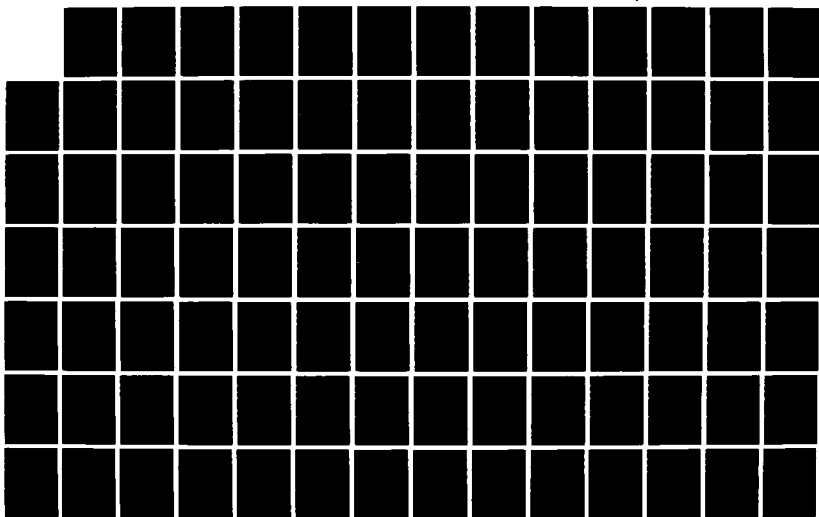
PAX ECONOPACK ECONOMIC ANALYSIS PACKAGE USERS MANUAL  
(U) ARMY ENGINEER DIV HUNTSVILLE AL H H MASON FEB 88  
HMOSP-86-117-ED-ES-REV

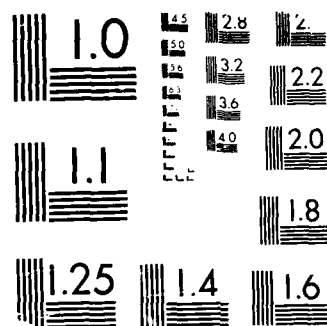
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NL





MICROCOPY RESOLUTION TEST CHART  
 NATIONAL BUREAU OF STANDARDS-1963-A

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >DESIGN <CR>  
>AND <CR>  
>CONSTRUCTION <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >22473.6 14\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >SERVICES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 14\*378 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 14\*1608 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MAINTENANCE <CR>  
>AND <CR>  
>REPAIR <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 10\*540 4\*792 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >FURNITURE <CR>  
>AND <CR>  
>EQUIPMENT <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 6  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 505 13\*120 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 7  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 3 has only 6 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 1 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 2 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >3 <CR>

NOTES: None.

COMPUTERS RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 3  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >4 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 4 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >5 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 5  
(<CR> DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: >6 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NUMBER OF THE DIFFERENTIAL  
INFLATION INDEX FOR EXPENSE ITEM 6 (<CR>  
DEFAULTS TO NO INFLATION):

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX (<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE (RESIDUAL)  
VALUE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF ALTERNATIVE 3.  
ENTER ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME OF ALTERNATIVE 4  
(20 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: This EA has only 3 alternatives.

COMPUTER'S RESPONSE: THIS COMPLETES THE ALTERNATIVE INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT/REDO  
(A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.



COMPUTER'S RESPONSE: DISCUSS ALL SOURCES AND DERIVATIONS OF YOUR COSTS AND BENEFITS FOR THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I<CR>  
I>Cost estimation was performed by the <CR>  
I>estimators in the Mobile District Office. <CR>  
I>Costs were estimated in 1985 dollars. <CR>  
I>Maintenance, repair, utilities, <CR>  
I>furniture, equipment, and services <CR>  
I>costs estimates were made by the <CR>  
I>DEH staff with the assistance of the <CR>  
I>District Office <CR>.  
I><CR>  
I>Two inflation indexes were used: one <CR>  
I>developed by the Mobile District Office <CR>  
I>and the second published by OSD Office <CR>  
> <CR>  
I>Alternative 1: Build to Lease <CR>  
I>Lease rent, service, utilities, and <CR>  
I>maintenance and repair costs are <CR>  
I>specified in the lease contract and will <CR>  
I>increase with inflation (OSD) inflation <CR>  
I>rates were used.) <CR>  
I><CR>  
I>Alternative 2: MCA Construction <CR>  
I>MCA construction costs were developed <CR>  
I>by use of the TRI-Services Cost Model: <CR>  
I>\$71,000.00 per unit x 500 units <CR>  
I>= \$35,944,360.00 Utilities costs are <CR>  
I>based on historical data at \$4,116.00 <CR>  
I>per unit per year. Maintenance and <CR>  
I>repair costs are based upon historical <CR>  
I>data at \$1,080.00 per unit per year. <CR>  
I>Service costs reflect garbage collection <CR>  
I>and entomological services. This cost is <CR>  
I>based upon current annual costs in Panama <CR>  
I>of \$756.00 per unit. Equipment costs are <CR>  
I>as follows: <CR>  
I>Washer/dryer \$ 422.00 <CR>  
I>Range \$ 722.00 <CR>  
I>Refrigerator \$ 250.00 <CR>  
I>TOTAL \$1,394.00 per unit <CR>  
I>Maintenance and repair of equipment is <CR>  
I>estimated to average \$23.00 per unit per <CR>  
I>year. <CR>  
I>Alternative 3: Trailer/Relocatable Housing <CR>  
I>Units <CR>  
I>Each unit was estimated to cost <CR>  
I>\$11,600.00 including furnishings. <CR>  
I>Transportation costs (services) is <CR>

USER'S RESPONSE: I> estimated to be \$6,500.00 per unit. <CR>  
(Continued) I> Utilities, maintenance and repair, and <CR>  
I> equipment was based upon historical <CR>  
I> data. Foundations, water and sewer <CR>  
I> lines, and the road network is existing. <CR>  
I><CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBERS FOR GRAPH NUMBER 1  
(<CR> TO EXIT):

USER'S RESPONSE: >1 2 3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBERS FOR GRAPH NUMBER 2  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: Analyst entered a <CR> to exit because only one  
graph was needed.

COMPUTER'S RESPONSE: THIS COMPLETES THE GRAPHICS INFORMATION  
BLOCK. ENTER ACCEPT/CHANGE/PRINT/REDO  
(A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF SENSITIVITY ANALYSIS NUMBER 1  
(60 CHARACTERS MAX):

USER'S RESPONSE: >TEST OF CHANGES IN CONSTRUCTION COSTS <CR>

NOTES: Enter title on one line.

COMPUTER'S RESPONSE: ENTER THE TWO ALTERNATIVES TO BE INCLUDED IN THE  
SENSITIVITY ANALYSIS:

USER'S RESPONSE: >2 3 <CR>

NOTES: Only 2 alternatives are allowed.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS TO CHANGE FOR ALTERNATIVE  
NUMBER 2:

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS TO CHANGE FOR ALTERNATIVE  
NUMBER 3:

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE UPPER LIMIT OF THE CHANGE  
(<CR> TO DEFAULT TO 200%):

USER'S RESPONSE:> <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBER TO BE RANKED AS  
LEAST COST:

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF  
SENSITIVITY ANALYSIS NUMBER 1. ENTER  
ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF SENSITIVITY ANALYSIS  
NUMBER 2 (60 CHARACTERS MAX):

USER'S RESPONSE:

>INCREASE OF M&R COSTS FOR ALT #3 VS NEXT LOWEST COST ALT #2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TWO ALTERNATIVES TO BE INCLUDED  
IN THIS SENSITIVITY ANALYSIS:

USER'S RESPONSE: >2 3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS TO CHANGE FOR  
ALTERNATIVE NUMBER 2:

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS TO CHANGE FOR  
ALTERNATIVE NUMBER 3:

USER'S RESPONSE: >5 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE UPPER LIMIT OF THE CHANGE  
(<CR> TO DEFAULT TO 200%):

USER'S RESPONSE: >50 <CR>

NOTES: User wishes to override the ECONPACK  
default value.

COMPUTER'S RESPONSE: ENTER THE ALTERNATIVE NUMBER TO BE RANKED  
AS LEAST COST:

USER'S RESPONSE: >2 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF SENSITIVITY  
ANALYSIS NUMBER 2: ENTER  
ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF SENSITIVITY ANALYSIS  
NUMBER 3 (60 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Only 2 sensitivity analysis were needed.

COMPUTER'S RESPONSE: THIS COMPLETES THE SENSITIVITY ANALYSIS  
INFORMATION BLOCK. ENTER  
ACCEPT/CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL RESULTS AND RECOMMENDATIONS FOR  
THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I <CR>  
I>As can be seen in the executive <CR>  
I>summary, the lowest cost alternative <CR>  
I>is the trailer/relocatable building <CR>  
I>one. It is more than \$14 million <CR>  
I>less expensive than any other. A <CR>  
I>sensitivity analysis which allowed <CR>  
I>the estimated maintenance costs to <CR>  
I>increase by as much as 50% was <CR>  
I>performed. The trailer alternative <CR>  
I>was the lowest cost. <CR>  
I> <CR>  
I>It is recommended that the trailer/ <CR>  
I>relocatable building alternative be <CR>  
I>funded. <CR>  
I><CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: YOUR PANAMA INPUT FILE HAS BEEN SAVED. DO  
YOU WISH TO GENERATE ECONOMIC ANALYSIS  
REPORTS (Y/N)

USER'S RESPONSE: >Y <CR>

NOTES: None.

CASE STUDY: CONSOLIDATED MAINTENANCE FACILITY

COMPUTER'S RESPONSE: PLEASE ENTER YOUR INPUT FILE NAME  
(8 CHARACTERS MAX):

USER'S RESPONSE: >PRIMARY <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE PROJECT TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >CONSOLIDATED MAINTENANCE FACILITY <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE NAME, TITLE, AND PHONE NUMBER OF  
THE ACTION OFFICER (48 CHARACTERS MAX):

USER'S RESPONSE: >BERNICE ELLIS <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ORGANIZATION TITLE  
(48 CHARACTERS MAX):

USER'S RESPONSE: >DEH, FORT BOWIE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE OBJECTIVE OF THE ANALYSIS  
(48 CHARACTERS MAX):

USER'S RESPONSE: >PROVIDE 210,000 SF OF MAINTENANCE SHOPS <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE INITIAL INFORMATION



BLOCK. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSES: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL ASSUMPTIONS FOR THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I <CR>  
I>PER REGULATORY GUIDELINES, A <CR>  
I>DISCOUNT RATE OF 10% IS USED. <CR>  
I>TRAINING IS 1% OF EQUIPMENT <CR>  
I>ACQUISITION COSTS. EQUIPMENT <CR>  
I>MAINTENANCE IS 4.5% OF ACQUISITION <CR>  
I>COST. NEW CONSTRUCTION WILL TAKE <CR>  
I>3 YEARS. EQUIPMENT LIFE IS 12 YEARS <CR>  
I><CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL ALTERNATIVES CONSIDERED FOR THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I <CR>  
I>THE FOLLOWING ALTERNATIVES WERE <CR>  
I>CONSIDERED IN THIS ECONOMIC <CR>  
I>ANALYSIS: NEW CONSTRUCTION: <CR>  
I>CONSTRUCTION OF A CONSOLIDATED <CR>  
I>MAINTENANCE FACILITY. THIS <CR>  
I>ALTERNATIVE REPLACES THE EXISTING <CR>  
I>VINTAGE TEMPORARY BUILDING AND <CR>  
I>PROVIDES THE NECESSARY 210,000 SF OF <CR>  
I>MAINTENANCE SPACE. STATUS QUO <CR>  
I>(MODIFIED): UPGRADE THE EXISTING <CR>  
I>FACILITIES. CURRENTLY, 28 SEPARATE <CR>  
I>DISPERSED FACILITIES EXIST, SPREAD <CR>  
I>OVER A 5-MILE RADIUS. THESE <CR>  
I>FACILITIES WILL BE MODIFIED TO <CR>  
I>PROVIDED THE NECESSARY MAINTENANCE <CR>

USER'S RESPONSE: I>SPACE. <CR>

(Continued)

I><CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE PERIOD OF ANALYSIS  
(60 YEARS MAX):

USER'S RESPONSE: >25 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE START YEAR OF THE ANALYSIS  
(4 CHARACTERS REQUIRED):

USER'S RESPONSE: >1989 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE BASE YEAR OF THE ANALYSIS  
(<CR> TO DEFAULT TO THE START YEAR):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE DISCOUNT RATE  
(<CR> TO DEFAULT TO 10%):

USER'S RESPONSE: ><CR>

NOTES: 1989 is accepted as the base year.

COMPUTER'S RESPONSE: ENTER THE GLOBAL DISCOUNTING CONVENTION  
(<CR> TO DEFAULT TO 2): (1 = BEGINNING OF  
YEAR, 2 = MIDDLE OF YEAR, 3 = END OF YEAR)

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO ADD A DIFFERENTIAL INFLATION  
INDEX (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO ADD A RESIDUAL SCHEDULE  
(Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ANALYSIS TYPE PRIMARY OR  
SECONDARY (P/S):

USER'S RESPONSE: >P <CR>

NOTES: None.

COMPUTER'S RESPONSE: PLEASE SELECT ALTERNATIVE COST INPUT  
METHOD:  
1. AS ENTERED (DEFAULT)  
2. IN THOUSANDS OF DOLLARS (\$1 = \$1,000)  
3. IN MILLIONS OF DOLLARS (\$1 = 1,000,000)

PLEASE ENTER CHOICE:

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE DATA INFORMATION BLOCK.  
ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS IS THE PRESENT (STATUS QUO)  
ALTERNATIVE IN THE PRIMARY ANALYSIS. ENTER  
THE NAME OF ALTERNATIVE 1 (20 CHARACTERS  
MAX):

USER'S RESPONSE: >UPGRADE STATUS QUO <CR>

NOTES: In a primary analysis, the first  
alternative is the status quo situation.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF ALTERNATIVE 1  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE: >MODIFY AND UPGRADE EXISTING FACILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 1  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >INITIAL <CR>  
>UPGRADE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >2\*4823675 23\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >EQUIPMENT <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 CHARACTERS PER LINE MAX):

USER'S RESPONSE: >3540684 10\*0 3540684 13\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >TRAINING <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25000 24\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ANNUAL <CR>  
>M&R <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >4\*62960 21\*251835 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ANNUAL <CR>  
>UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25\*178012 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >PERSONNEL <CR>  
>COST <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 6  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25\*9301600 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 7  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MHE <CR>  
>FUEL <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE 7  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25\*5000 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 8  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >DEPOT <CR>  
>TRANSPORT <CR>  
>COST <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 8  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25\*103443 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 9  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >VEHICLE <CR>  
>USAGE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 9  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >25\*26440 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 10  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >EQUIPMENT <CR>  
>MAINTENANCE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 10  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 24\*297283 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 11  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 1 has only 10 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF EXPENSE  
ITEMS. ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.



COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE  
(RESIDUAL) VALUE (Y/N)?

USER'S RESPONSE: >N <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS FOR ALTERNATIVE 1  
THAT ARE RECURRING COSTS:

USER'S RESPONSE: >4 5 6 7 8 9 10 <CR>

NOTES: All cost in the status quo alternative  
must be classified as recurring costs or  
refurbishment costs.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS FOR ALTERNATIVE 1  
THAT ARE REFURBISHMENT COSTS:

USER'S RESPONSE: >1 2 3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE CATEGORIZATION OF  
EXPENSE ITEMS.  
ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS IS A PROPOSED ALTERNATIVE IN THE  
PRIMARY ANALYSIS.  
ENTER THE NAME OF ALTERNATIVE 2  
(20 CHARACTERS MAX):

USER'S RESPONSE: >NEW CONSTRUCTION <CR>

NOTES: In a primary analysis, the second and  
succeeding alternatives are proposed  
alternatives.

COMPUTER'S RESPONSE: ENTER THE DESCRIPTIVE TITLE OF  
ALTERNATIVE 2  
(2 LINES OF 48 CHARACTERS MAX):

USER'S RESPONSE: >CONSTRUCTION OF A CONSOLIDATED <CR>  
>MAINTENANCE FACILITY <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE ECONOMIC LIFE OF ALTERNATIVE 2  
(<CR> TO DEFAULT TO PERIOD OF ANALYSIS):

USER'S RESPONSE: >25 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 1  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >INITIAL <CR>  
>CONSTRUCTION <CR>  
>COST <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 1  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*9000000 22\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 2  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >EQUIPMENT <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 2  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 2\*3123275 10\*0 2\*3123275 10\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 3  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >TRAINING <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 3  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >0 2\*25000 22\*0 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 4  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >M&R <CR>  
>CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 4  
(10 ENTRIES MAX):

USER'S RESPONSE: >3\*62960 22\*234668 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 5  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >ANNUAL <CR>  
>UTILITIES <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 5  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*178012 22\*242030 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 6  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >PERSONNEL <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 6  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*9301600 22\*5699175 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 7  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >MHE <CR>  
>FUEL <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 7  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*5000 22\*1800 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 8  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >VEHICLE <CR>  
>USAGE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 8  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*26440 22\*14730 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE FOR EXPENSE ITEM 9  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: >EQUIPMENT <CR>  
>MAINTENANCE <CR>  
><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE COSTS FOR EXPENSE ITEM 9  
(10 ENTRIES PER LINE MAX):

USER'S RESPONSE: >3\*297283 22\*312570 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE TITLE OF EXPENSE ITEM 10  
(3 LINES OF 12 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: Alternative 2 has only 9 expense items.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
DIFFERENTIAL INFLATION INDEX  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEM NUMBER TO ASSIGN A  
SPECIAL DISCOUNTING CONVENTION  
(<CR> TO EXIT):

USER'S RESPONSE: ><CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF  
EXPENSE ITEMS. ENTER ACCEPT/CHANGE/PRINT  
(A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DO YOU WISH TO INCLUDE A SALVAGE  
(RESIDUAL) VALUE (Y/N)?

USER'S RESPONSE: >Y <CR>

NOTES: None.

COMPUTER'S RESPONSE: SELECT:  
1) ONE TIME (AT THE END OF THE PERIOD  
OF ANALYSIS)  
2) USE RESIDUAL SCHEDULE

USER'S RESPONSE: >1 <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE SALVAGE VALUE:

USER'S RESPONSE: >17453984 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE IDENTIFICATION OF  
RESIDUAL INFORMATION  
ENTER ACCEPT/CHANGE/PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS FOR ALTERNATIVE 2  
THAT ARE RECURRING COSTS:

USER'S RESPONSE: >4 5 6 7 8 9 <CR>

NOTES: In a proposed alternative, all costs must  
be classified as recurring, investment,  
inherited assets, or replaced assets.

COMPUTER'S RESPONSE: ENTER THE EXPENSE ITEMS FOR ALTERNATIVE 2  
THAT ARE INVESTMENT COSTS:

USER'S RESPONSE: >1 2 3 <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS COMPLETES THE CATEGORIZATION OF  
EXPENSE ITEMS. ENTER ACCEPT/CHANGE/PRINT  
(A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: This prompt appears when all expense  
items are classified.

COMPUTER'S RESPONSE: THIS COMPLETES THE DEFINITION OF  
ALTERNATIVE 2. ENTER ACCEPT/CHANGE/  
PRINT (A/C/P):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: THIS IS A PROPOSED ALTERNATIVE IN THE  
PRIMARY ANALYSIS. ENTER THE NAME OF  
ALTERNATIVE 3 (20 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: This has only 2 alternatives.

COMPUTER'S RESPONSE: THIS COMPLETES THE ALTERNATIVE  
INFORMATION BLOCK. ENTER ACCEPT/  
CHANGE/PRINT/REDO (A/C/P/R):

USER'S RESPONSE: >A <CR>

NOTES: None.

COMPUTER'S RESPONSE: DISCUSS ALL SOURCES AND DERIVATIONS OF  
YOUR COSTS AND BENEFITS FOR THIS ECONOMIC  
ANALYSIS:

NEW FILE:



USER'S RESPONSE:

E>I <CR>  
I>STATUS QUO: INITIAL UPGRADE COSTS <CR>  
I>WERE ESTIMATED BASED ON \$50.00 <CR>  
I>PER SQUARE FOOT. MAINTENANCE AND <CR>  
I>REPAIR WAS ESTIMATED AT \$1.31 PER <CR>  
I>SQUARE FOOT. UTILITIES ESTIMATES <CR>  
I>WERE OBTAINED FROM DA FACILITIES <CR>  
I>ENGINEERING AND HOUSING ANNUAL <CR>  
I>SUMMARY OF OPERATIONS, THE FACTOR <CR>  
I>WAS \$.92 PER SQ. FT. PERSONNEL <CR>  
I>COSTS WERE ESTIMATED AS FOLLOWS:  
I> <CR>  
I>\$24,047.00 X 283 EMPLOYEES = \$6,805,301 <CR>  
I>\$32,062.00 X 50 CONTRACTORS = \$1,603,100 <CR>  
I> OVERTIME = \$ 893,199 <CR>  
I>TOTAL = \$9,301,600 <CR>  
I> <CR>  
I> <CR>  
I>FUEL COSTS WERE ESTIMATED AT \$.84 PER <CR>  
I>GALLON CONSUMED. VEHICLE USAGE COSTS <CR>  
I>ARE BASED ON HISTORICAL DATA. NEW <CR>  
I>CONSTRUCTION: INITIAL CONSTRUCTION <CR>  
I>COST DATA WAS OBTAINED FROM 415-17. <CR>  
I>PERSONNEL COSTS WERE DETERMINED BY <CR>  
I>USING AN AVERAGE ANNUAL SALARY OF <CR>  
I> <CR>  
I>24,047.15 XC 237 EMPLOYEES = \$5,699,175 <CR>  
I> <CR>  
I>MAINTENANCE AND REPAIR WAS ESTIMATED <CR>  
I>AT \$1.12 PER SQ. FT. UTILITIES COSTS <CR>  
I>WERE ESTIMATED AT \$1.15 PER SQ. FT. <CR>  
I>VEHICLE USAGE WAS ESTIMATED TO BE 56% <CR>  
I>LESS THAN STATUS QUO. FUEL COSTS <CR>  
I>WERE ESTIMATED AT \$0.84 PER GALLON <CR>  
I>CONSUMED. <CR>  
I> <CR>  
I>>FILE <CR>

NOTES:

None.

COMPUTER'S RESPONSE:

ENTER THE ALTERNATIVE NUMBERS FOR GRAPH  
NUMBER 1 (<CR> TO EXIT):

USER'S RESPONSE:

><CR>

NOTES:

The analyst did not want a graph.

COMPUTER'S RESPONSE: ENTER THE TITLE OF SENSITIVITY ANALYSIS 1  
(60 CHARACTERS MAX):

USER'S RESPONSE: ><CR>

NOTES: The analyst did not want a sensitivity analysis.

COMPUTER'S RESPONSE: DISCUSS ALL RESULTS AND RECOMMENDATIONS  
FOR THIS ECONOMIC ANALYSIS:

NEW FILE:

USER'S RESPONSE: E>I <CR>  
I>THE NEW CONSTRUCTION ALTERNATIVE <CR>  
I>WAS FOUND TO BE THE MOST <CR>  
I>ECONOMICAL OVER THE 25-YEAR PERIOD <CR>  
I>OF ANALYSIS. THIS ALTERNATIVE IS <CR>  
I>RECOMMENDED TO PROVIDE THE <CR>  
I>NECESSARY 210,000 SF OF <CR>  
I>MAINTENANCE SPACE TO ENSURE <CR>  
I>MISSION TRAINING AND READINESS. <CR>  
I><CR>  
E>FILE <CR>

NOTES: None.

COMPUTER'S RESPONSE: YOUR PRIMARY INPUT FILE HAS BEEN SAVED.  
DO YOU WISH TO GENERATE ECONOMIC ANALYSIS  
REPORTS (Y/N)?

USER'S RESPONSE: >Y <CR>

NOTES: None.

## CHAPTER 7

### FILE INPUT MODE

#### 7.0 FILE INPUT MODE

7.1 Introduction: This chapter is for analysts who choose to create their input file(s) using the text editor/CMS commands discussed in Chapter 4. This chapter presents the details of required input for performing an EA. Instructions for actually entering the file, whether by a DD Form 1391 Processor System user or not, are provided on pages 7-43 through 7-54. It is important that the analyst become well acquainted with the general layout of an input file.

ECONPACK is a very flexible piece of software, containing many optional features for performing EAs. The terminal prompting mode discussed in Chapter 6, while requiring little knowledge of the computer system, offers little freedom in utilizing these options. With the file input mode discussed in this chapter, the user has freedom to use any of the available options, along with the responsibility to devote more thought to the process.

For the user's convenience, a command summary is presented on the left side of the page. These summaries provide a quick reference for the commands explained in detail on that particular page.

7.2 Sample Input File: An input file created using the file input mode contains the same major blocks of information as a file created using the terminal prompting mode. However, as will be noted in the forthcoming sections, the file is begun by an \* and is ended by the command, STOP RUN.

This input file structure is demonstrated in the following ECONPACK input file configuration representations for both primary and secondary analysis.

### ECONPACK INPUT FILE CONFIGURATION

This is a representation of the blank input file configuration. It was laid out to identify the correct sequence of information held within an input file, as well as the information required to execute the file without errors. The numbers in the left-hand margin indicate the information blocks. Asterisks denote the beginning of the file and the end of each block. Items preceded by a plus sign are not required to perform the EA.

NOTE: Input data lines are limited to 72 characters (including quotes and ampersands). Ampersands may be used to indicate continuation of data on the following line. NO BLANK LINES ARE ALLOWED. Either a comma (",") or a space (" ") may be used as a separator/delimiter.

### PRIMARY ANALYSIS

FN FT75F001

TOF

```
I.  *
    PROJECT TITLE IS ' '
    ACTION OFFICER IS ' '
    ORGANIZATION IS ' '
    OBJECTIVE IS ' '
    *
II.  + BEGIN ASSUMPTIONS
    + [Enter assumptions text.]
    + END ASSUMPTIONS
    + *
III. + BEGIN DISCUSSION OF ALTERNATIVES
    + [Enter alternatives text.]
    + END DISCUSSION OF ALTERNATIVES
    + *
IV.  BEGIN DATA
    PERIOD OF ANALYSIS IS      YEARS
    START YEAR IS
    BASE /YEAR IS
    DISCOUNT RATE IS
    GLOBAL DISCOUNTING CONVENTION IS
    + INFLATION INDEX      IS ' ' &
```

+ RESIDUAL SCHEDULE IS ' ' &

PRIMARY ANALYSIS  
COSTS STORED IN ' ' DOLLARS  
END DATA

\*

V. BEGIN ALTERNATIVE 1  
ALTERNATIVE NAME IS ' '  
ALTERNATIVE DESCRIPTION IS &  
' '  
' '

ECONOMIC LIFE IS YEARS  
EXPENSE ITEM IS '::' &  
INFLATION FACTORS ARE  
DISCOUNT FACTORS ARE

+ SALVAGE VALUE IS

or

+ RESIDUAL TYPE IS (for SL, DB, and US)  
+ RESIDUAL START VALUE IS (for SL, DB, and US)  
+ RESIDUAL LIFE IS YEARS (for SL and DB)  
+ RESIDUAL BEGINS IN (for SL and DB)  
+ RESIDUAL RATE IS (for DB)  
+ RESIDUAL INFLATION INDEX IS (for SL, DB, and US)  
+ RESIDUAL DISCOUNTING CONVENTION IS (for SL, DB, and US)  
+ RECURRING COSTS ARE  
+ REFURBISHMENT COSTS ARE

END ALTERNATIVE 1  
BEGIN ALTERNATIVE  
ALTERNATIVE NAME IS ' '  
ALTERNATIVE DESCRIPTION IS &  
' '  
' '

ECONOMIC LIFE IS YEARS  
EXPENSE ITEM IS '::' &

INFLATION FACTORS ARE  
DISCOUNT FACTORS ARE

+ SALVAGE VALUE IS

or

+ RESIDUAL TYPE IS (for SL, DB, and US)  
+ RESIDUAL START VALUE IS (for SL, DB, and US)  
+ RESIDUAL LIFE IS YEARS (for SL and DB)  
+ RESIDUAL BEGINS IN (for SL and DB)  
+ RESIDUAL RATE IS (for DB)  
+ RESIDUAL INFLATION INDEX IS (for SL, DB, and US)  
+ RESIDUAL DISCOUNTING CONVENTION IS (for SL, DB, and US)  
+ RECURRING COSTS ARE  
+ INVESTMENT COSTS ARE  
+ INHERITED ASSETS ARE  
+ REPLACED ASSETS ARE  
END ALTERNATIVE

\*

VI. + BEGIN SOURCE/DERIVATION  
+ [Enter source/derivation text.]  
+ END SOURCE/DERIVATION  
+ \*  
VII. + BEGIN GRAPHICS  
+ PLOT ALTERNATIVES  
+ END GRAPHICS  
+ \*  
VIII. + BEGIN SENSITIVITY ANALYSIS  
+ TITLE IS ' '  
+ ALTERNATIVES ARE  
+ CHANGE  
+ LIMIT IS  
+ RANK ALTERNATIVE FIRST  
+ END SENSITIVITY ANALYSIS  
+ \*  
IX. + BEGIN RESULTS  
+ [Enter results text.]  
+ END RESULTS  
+ \*  
X. STOP RUN

# SECONDARY ANALYSIS

FN FT75F001

TOF

- I.     \*  
PROJECT TITLE IS ' '  
ACTION OFFICER IS ' '  
ORGANIZATION IS ' '  
OBJECTIVE IS ' '  
      \*
- II.    + BEGIN ASSUMPTIONS  
      + [Enter assumptions text.]  
      + END ASSUMPTIONS  
      + \*
- III.   + BEGIN DISCUSSION OF ALTERNATIVES  
      + [Enter alternatives text.]  
      + END DISCUSSION OF ALTERNATIVES  
      + \*
- IV.    BEGIN DATA  
PERIOD OF ANALYSIS IS       YEARS  
START YEAR IS  
BASE YEAR IS  
DISCOUNT RATE IS  
GLOBAL DISCOUNTING CONVENTION IS  
+ INFLATION INDEX       IS ' ' &  
  
+ RESIDUAL SCHEDULE   IS ' ' &  
  
SECONDARY ANALYSIS  
COSTS STORED IN ' ' DOLLARS  
END DATA  
      \*
- V.    BEGIN ALTERNATIVE  
ALTERNATIVE NAME IS ' '  
ALTERNATIVE DESCRIPTION IS &  
      ' '  
      ' '  
  
ECONOMIC LIFE IS       YEARS  
EXPENSE ITEM IS ' :: ' &  
  
INFLATION FACTORS ARE  
DISCOUNT FACTORS ARE  
+ SALVAGE VALUE IS  
      or  
+ RESIDUAL TYPE IS       (for SL, DB, and US)  
+ RESIDUAL START VALUE IS       (for SL, DB, and US)  
+ RESIDUAL LIFE IS       YEARS (for SL and DB)  
+ RESIDUAL BEGINS IN       (for SL and DB)  
+ RESIDUAL RATE IS       (for DB)  
+ RESIDUAL INFLATION INDEX IS       (for SL, DB, and US)  
+ RESIDUAL DISCOUNTING CONVENTION IS (for SL, DB, and US)  
END ALTERNATIVE  
      \*

VI. + BEGIN SOURCE/DERIVATION  
+ [Enter source/derivation text.]  
+ END SOURCE/DERIVATION  
\*  
VII. + BEGIN GRAPHICS  
+ PLOT ALTERNATIVES  
+ END GRAPHICS  
\*  
VIII. + BEGIN SENSITIVITY ANALYSIS  
+ TITLE IS ' '  
+ ALTERNATIVES ARE  
+ CHANGE  
+ LIMIT IS  
+ RANK ALTERNATIVE FIRST  
+ END SENSITIVITY ANALYSIS  
\*  
IX. + BEGIN RESULTS  
+ [Enter results text.]  
+ END RESULTS  
+ \*  
X. STOP RUN



A description of the file input blocks is represented on the following pages. It should be noted from the file input configuration displayed above, the organization of blocks is the same for primary and secondary analyses. The primary analysis, however, includes some information which is not used on a secondary analysis. Specifically, the alternatives for the a primary analysis are of two types: status quo (the present way of fulfilling an objective) and proposed (new ways of accomplishing the same objective with the possibility of a cost-saving). Further, the expense items for a primary analysis are classified into categories, as displayed below:

#### PRIMARY ANALYSIS COST CLASSIFICATIONS

Status Quo Alternative	Recurring, refurbishment
Proposed Alternative(s)	Recurring, investment, inherited assets, replaced assets

These types of alternatives and cost classifications are explained further in various parts of this manual, but a brief mention of the unique data requirements of a primary analysis is appropriate here to alert the user to the fact that some concepts used in a primary analysis are not appropriate for a secondary analysis.

FILE INPUT MODE  
BEGINNING STATEMENT

<u>COMPONENT</u>	<u>EXPLANATION</u>
* [Required; enter as shown, on a line by itself.]	This statement signals ECONPACK to begin an input file.

FILE INPUT MODE  
INITIAL INFORMATION BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
I. INITIAL INFORMATION	This block is a collection of information to be used in labeling reports and as a means of identifying the input files.
A. PROJECT TITLE IS '-----'	
[Required; enclose project title in single quotes; use an ampersand if more than one line is needed; limited to 48 characters.]*	A. The project title should describe the project under consideration.
B. ACTION OFFICER IS '-----'	
[Required; enclose name, title, and phone number of action officer in single quotes; limited to 48 characters.]	B. The action officer is the person to whom all questions about the analysis should be addressed.
C. ORGANIZATION IS '-----'	
[Required; enclose organization title in single quotes; use an ampersand if more than one line is needed; limited to 48 characters.]	C. The organization is the location of the project to be performed.
D. OBJECTIVE IS '-----'	
[Required; enclose objective in single quotes; use an ampersand if more than one line is needed; limited to 48 characters.]	D. The objective is a clear, concise statement of why the project is being done.

\*The underscore is used for illustration and should not be entered in the input file.

FILE INPUT MODE  
INITIAL INFORMATION BLCOK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
E. *	E. The asterisk is required
[Required; enter, as	to signal the end of the
shown, on a line	Initial Information Block.
by itself.]	

FILE INPUT MODE  
DISCUSSION OF ASSUMPTIONS TEXT BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
II. DISCUSSION OF ASSUMPTIONS TEXT (Optional)	This block allows for narrative concerning the assumptions employed in the economic analysis.
A. BEGIN ASSUMPTIONS [Required if Discussion of Assumptions Text Block is used; enter, as shown, on a line by itself. Beginning on the next line, enter as much narrative as desired.]	A. This command is required to signal the beginning of the Discussion of Assumptions Text Block.
B. ASSUMPTIONS TEXT [Required if Discussion of Assumptions Text Block is used.]	B. Type in text in paragraph format. Lines may not exceed 72 characters.
C. END ASSUMPTIONS [Required if Discussion of Assumptions Text Block is used; enter, as shown, on a line by itself.]	C. This command is required to signal the end of the narrative.
D. * [Required if Discussion of Assumptions Text Block is used; enter, as shown, on a line by itself.]	D. The asterisk is required to signal the end of the Discussion of Assumptions Text Block.

FILE INPUT MODE  
DISCUSSION OF ALTERNATIVES TEXT BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
III. DISCUSSION OF ALTERNATIVES TEXT (Optional)	This block allows for narrative concerning the alternatives considered in the economic analysis. In addition to rationale for and description of alternatives considered, explanation may also be given for the exclusion of other conceivable alternatives (e.g., inconsistent with regulations, known to be cost ineffective, etc.).
A. BEGIN DISCUSSION OF ALTERNATIVES	
[Required if Discussion of Alternatives Text Block is used; enter, as shown, on a line by itself. Beginning on the next line, enter as much narrative as desired.]	A. This statement is required to signal the beginning of Discussion of Alternatives Text Block.
B. ALTERNATIVES TEXT	
[Required if Discussion of Alternatives Text Block is used.]	B. Type in the text in paragraph format. Lines may not exceed 72 characters.
C. END DISCUSSION OF ALTERNATIVES	
[Required if Discussion of Alternatives Text Block is used; enter, as shown, on a line by itself.]	C. The statement is required required to signal the end of the narrative.
D. *	
[Required; enter as shown, on a line by itself.]	D. The asterisk is required to signal the end of the Discussion of Alternatives Text Block.

FILE INPUT MODE  
DATA INFORMATION BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
IV. DATA INFORMATION	The block consists of information relating to the <u>project</u> . Note that additional information relating to specific alternatives is entered in the next block.
A. BEGIN DATA [Required; enter as shown, on a line by itself.]	A. This command is required to signal the beginning of the Data Information Block.
B. PERIOD OF ANALYSIS IS -- YEARS  [Required; fill in the blank with the number of years in period of analysis; limited to two digits.]	B. Period of analysis is the time, in years, from the beginning of the start year, for which compilations of alternative costs are included.
C. START YEAR IS ---- [Required; fill in the blank with the start year, 4 digits are required.]	C. The start year is the year in which costs are initially incurred.
D. BASE YEAR IS ---- [Required; fill in the blank with the base year; 4 digits are required.]	D. The base year is the reference point in time for present value calculations. All costs are converted to present value amounts as of the beginning of the base year.

FILE INPUT MODE  
DATA INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
E. DISCOUNT RATE IS ---- [Required; fill in the blank with the discount rate (in percentage terms); limited to 4 characters, including decimal.]	E. The DISCOUNT RATE IS statement indicates the discount rate which will be used in present value calculations. Military Construction, Army (MCA) and Family Housing (AFH) have traditionally used a fixed discount rate of 10% to compute net present value.
EXAMPLES:	
Enter 10 percent as 10. Enter 8.75 percent as 8.75.	When the standard 10% rate is used, the analysis is performed in constant dollar terms (i.e., allowance is made only for differential inflation, not for general inflation). Application of the discount rate in lease situations has been altered.
	Users should consult the OCE Economic Briefs in the ECONPACK HELP Facility for current information on the discount rate in lease situations.



FILE INPUT MODE  
DATA INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
F. RESIDUAL SCHEDULE -- IS '-----' & * [Enter residual schedule values.]	F. A residual schedule is a series of residual values, one for each year in the period of analysis.
[Optional; is used, fill in the first blank with integer denoting the number of the residual schedule. (ECONPACK allows up to 10 residual schedules. Residual schedules must be numbered sequentially.) Fill in the second blank with the title of the residual schedule, enclosed in single quotes (limited to 20 characters); on the next line(s), enter a residual schedule value, in decimal terms, for each year in the period of analysis.]	
G. GLOBAL DISCOUNTING CONVENTION IS --	G. This feature allows the user to establish a global discounting convention for all expense items. Discounting conventions are: beginning-of year (denoted by the integer 1), middle-of-year (denoted by the integer 2), and end-of-year (denoted by the integer 3).
[Required; fill in the blank with an integer corresponding to the appropriate discounting convention.]	

\* Ampersands may be used to indicate continuation of data on the following line.

FILE INPUT MODE  
DATA INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
H. INFLATION INDEX -- IS '-----' & [Enter inflation index values.]	
[Optional; if used, fill in the first blank with an integer denoting the number of the inflation index. (ECONPACK allows up to 10 inflation indexes.) Fill in the second blank with the title of the inflation index, enclosed in single quotes (limited to 20 characters); on the next line(s), enter the inflation index values in decimal terms (one value for each year in the period of analysis).]	H. An inflation index allows the user to assign an expense item an inflation rate different from the inflation rate expected for the general economy.

FILE INPUT MODE  
DATA INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
I. ----- ANALYSIS [Required; fill in the blank with the word PRIMARY or SECONDARY.]	<p>I. The economic analysis must be specified as either PRIMARY or SECONDARY. A PRIMARY analysis is used if the objective is currently being met, but the possibility of a cost-reducing alternative means of meeting the objective is under consideration. In this case, the proposed new alternative is compared to the status quo alternative to determine if cost-savings would result from implementation of the proposed new alternative.</p> <p>A SECONDARY analysis is used if the objective is not currently being met. In this case, the various alternative means of meeting the objective are compared on the basis of net present value of costs.</p>

FILE INPUT MODE  
DATA INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
J. COSTS STORED IN '-----' DOLLARS [Required; fill in the blank with word or words denoting what \$1 equals.]	J. Enter one of the following words/phrases: 1. actual 2. thousands of 3. millions of
K. END DATA [Required; enter, as shown, on a line by itself.]	K. This command is required to signal the end of the data information.
L. * [Required; enter, as shown on a line by itself.]	L. The asterisk is required to signal the end of the Data Information Block.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
V. ALTERNATIVE INFORMATION	The Alternative Information Block is used to input information describing the various means by which an objective may be reached. Each alternative "sub-block" represents an alternative means of meeting the objective. ECONPACK allows up to 20 alternatives per analysis.
A. BEGIN ALTERNATIVE 1 [Required; enter, as shown, on a line by itself.]	A. Each alternative description starts with BEGIN ALTERNATIVE____. In a PRIMARY analysis, Alternative 1 is the status quo alternative (i.e., the current means of meeting the objective). This is significant because the classification of costs for the status quo alternative differs from the classification of costs for the proposed new alternatives.
B. ALTERNATIVE NAME IS '-----'  [Required, fill in the blank with the alternative name, enclosed in single quotes; limited to 20 characters.]	B. The alternative name is a short description of the alternative.
C. ALTERNATIVE DESCRIPTION IS '-----' &  [Required; fill in blank with descriptive title, enclosed in single quotes; limited to 2 lines of 48 characters each.]	C. The descriptive title is a more elaborate description of the alternative.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
D. ECONOMIC LIFE IS -- YEARS	
[Required; fill in the blank with the economic life; limited to two integers.]	D. The economic life is the period of time over which the benefits from an alternative are expected to accrue. The economic life of an alternative may be limited by its mission life or its physical life. The economic lives for the alternatives in the analysis need not be equal.
E. EXPENSE ITEM -- IS '----:-----:-----' & [Enter cost for each year in the period of analysis.]	
[Required; fill in the first blank with the integer corresponding to the expense item. (ECONPACK allows up to 20 expense items per alternative.) Fill in the second set of blanks with a title for the expense item; title field is limited to 3 lines of 12 characters each; the title may be entered on one line if each line is separated by a colon; fill in the third blank with a cost for each year in the period of analysis.]	E. Expense items are costs for the alternative. They can be negative, reflecting an influx of funds. Costs must be entered as numbers and may contain a decimal point.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
------------------------	--------------------

E. EXPENSE ITEM (Continued)

EXAMPLE:

If the period of analysis  
is 15 years and \$18,000,000  
construction costs will be  
incurred in the first two  
years, enter  
2\*18000000 13\*0.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
F. INFLATION FACTORS ARE -----	
[Required, fill in the blank with integer(s) corresponding to inflation index(es) created in the Data Information Block, together with the corresponding expense item(s). If an economic analysis does not require an inflation index, fill in the blank with zero's, as explained below in EXAMPLE 3.]	F. EAs are generally done in constant dollars and no inflation is included. However, ECONPACK allows for inclusion of tables for the purpose of incorporating recognized differential inflation in the EA. The numbers correspond to the inflation indexes defined in the Data Information Block.
EXAMPLE 1:	
For an alternative having 4 expense items, the statement, INFLATION FACTORS ARE 1 2 2 3, means that Inflation Index 1 applies to the first expense item, Index 2 to the second and third expense items, and Index 3 to the fourth expense item.	
EXAMPLE 2:	
In EXAMPLE 1, an alternate shorthand method is: INFLATION FACTORS ARE 1 2*2 3.	
EXAMPLE 3:	
If no inflation factors were needed, the appropriate entry would be <u>INFLATION FACTORS ARE 0 0 0 0</u> or <u>INFLATION FACTORS ARE 4*0</u> .	



FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
G. DISCOUNT FACTORS ARE --  [Required, fill in blank with integer(s) corresponding to discount factor(s) together with the corresponding expense item(s). If an economic analysis does not require that the global discounting convention be overridden, enter two's in the blank, as shown in EXAMPLE 3 below.]	G. This option allows the user to override the global discounting convention defined in the Data Information Block for each expense item. Available discounting conventions are: 1 = beginning-of-year 2 = middle-of-year 3 = end-of-year
EXAMPLE 1:  If there are four expense items, this statement would require that four discounting conventions be specified. The statement consists of the required identifier phrase, DISCOUNT FACTORS ARE, followed by the integers denoting the conventions. <u>DISCOUNT FACTORS ARE</u> <u>1 2 2 2</u> means the beginning-of-year convention applies to the first expense item in the alternative and the middle-of-year convention applies to the other three expense items.	

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

---

BLOCK/COMPONENT

EXPLANATION

---

EXAMPLE 2:

In EXAMPLE 1, an alternate shorthand method is DISCOUNT FACTORS ARE 1 3\*2.

EXAMPLE 3:

In EXAMPLE 1, if it was not necessary to override the global discounting convention, the appropriate entry would be DISCOUNT FACTORS ARE 2 2 2 2 or DISCOUNT FACTORS ARE 4\*2.

H. SALVAGE VALUE IS -----  
or  
RESIDUAL TYPE IS -----  
If a salvage value is used, fill in the blank with salvage value.  
If a residual is used, fill in the blank with the abbreviation for the appropriate residual schedule -- SL, DB, or US.]

H. The concept of salvage value can be incorporated into an EA in two general ways. Either the value can be determined determined independently and then entered explicitly as a return, or negative cost, or the user can make use of the ECONPACK feature which calculates and displays the entire depreciation schedule according to a particular form.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
H.1. SALVAGE VALUE IS ----	<p>H.1. By entering the SALVAGE VALUE IS statement, the amount entered is assumed to accrue at the end of the last year of the period of analysis. ECONPACK converts this amount to a present worth and subtracts the resulting value from the present value of the expense items to arrive at a net present value of the cost of the alternative.</p> <p>The salvage value amount should be in undiscounted constant dollars, unless some differential inflation is presumed to be applicable. If so, the amount entered should include such differential inflation. (I.e., ECONPACK will not automatically calculate the inflation for the salvage value when using the SALVAGE VALUE IS statement.)</p>
H.2. RESIDUAL TYPE IS --	<p>H.2. By making use of the RESIDUAL feature, the residual value calculations can be included using a preset residual factor schedule.</p>

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
H.2. RESIDUAL TYPE IS _____ (Continued)	<p>H.2 This feature calculates what the residual value would be in each year if the project were to be terminated in that year and subtracts this amount, in present value terms, from the cumulative present value of the expenses incurred for the alternative through that year. As a result, the analyst is able to see the comparison of alternatives for assumed project termination not only at the end of the period of analysis, but at the end of every year in the period of analysis as well.</p> <p>There are three "sub-options" for calculating depreciation: the straight-line method (SL), the amortization declining balance method (DB), or the user's own method (US). The user may specify an inflation index to apply to the residual schedule, if applicable. A discounting convention may also be specified.</p> <p>When performing an EA which includes salvage or residual values, all alternatives must use the same concept. Either all alternatives having such an occurrence should use the residual value feature, or they should all use the salvage value statement approach. The program will run with a mixture of these two concepts, but the results will be somewhat misleading. The end results to the last year of</p>

the period of analysis.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
H.2. RESIDUAL TYPE IS -- (Continued)	<p>But for selected years during the period of analysis, a comparison of calculation results is not meaningful, since the residual feature method shows net cumulative present value <u>less</u> discounted termination residual value, whereas the salvage value statement method does not include any subtraction of asset salvage value from cost until the <u>end</u> of the period of analysis.</p> <p>A tabular summary of the required and optional commands for the three different "sub-options" included in the RESIDUAL feature is illustrated in this section.</p> <p>The example shows, for each item involved in the RESIDUAL feature, the required (or optional) command, the residual type(s) for which it is required, and the applicable parameters which follow the command. RESIDUAL feature commands take the general form of COMMAND followed by the parameter.</p>

RESIDUAL SCHEDULE OPTIONS COMMAND SUMMARY  
(Used for RESIDUAL TYPE Command H.2)

<u>Command</u>	<u>Residual Type for Which Command Is Required</u>	<u>Parameter</u>
RESIDUAL TYPE IS --	SL	SL
	DB	DB
	US	Integer indicating sequence of residual schedule appearing in Data Information Block. If there are three different residual schedules, for example, and the second one is to be used, the parameter would be 2.
RESIDUAL START VALUE IS -----	SL, DB, US	Enter the constant dollar amount of start value, in dollars.
RESIDUAL LIFE IS -- YEARS	SL, DB	Enter the number of years of residual schedule life. (up to 60 years).

RESIDUAL SCHEDULE OPTIONS COMMAND SUMMARY  
(Continued)

<u>Command</u>	<u>Residual Type for Which Command Is Required</u>	<u>Parameter</u>
RESIDUAL BEGINS IN ----	SL, DB	Enter the year residual schedule begins. Residual in this begin year is equal to the start value. Residual factors indicating decline in residual value (depreciation) take effect in the year following this "begin" year.
RESIDUAL RATE IS ----	DB (Optional)	Enter the interest rate, in percent, upon which the amortization schedule used to derive the declining balance residual schedule is based.
		EXAMPLE:  Enter 8.5 percent as 8.5.
RESIDUAL INFLATION INDEX IS --	SL, DB, US (Optional)	Enter the integer indicating sequence of inflation schedule user wishes to apply to residual value. (ECONPACK allows up to 10 inflation indexes.)

RESIDUAL SCHEDULE OPTIONS COMMAND SUMMARY  
(Continued)

<u>Command</u>	<u>Residual Type for Which Command Is Required</u>	<u>Parameter</u>
RESIDUAL DISCOUNTING CONVENTION IS --	SL, DB, US (Optional)	Enter the integer corresponding to the appropriate discounting convention.  1 = beginning-of-year discounting convention. 2 = middle-of-year discounting convention. 3 = end-of-year discounting convention.



FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
J. COST CLASSIFICATION:  RECURRING COSTS ARE ---- [Optional for the status quo or proposed alternative in a primary analysis; if used, fill in the blank(s) with integer(s) corresponding to expense item(s) which is/are recurring cost(s).]	J. In a <u>PRIMARY</u> analysis, costs (expense items) for the status quo alternative are classified as either "recurring" or "refurbishment." Classification as "recurring" identifies an expense item as a repeating or recurring cost (usually annually) required to continue execution of the project or program alternative.
EXAMPLE:  If the first four expense items are recurring costs, the correct data entry would be <u>RECURRING</u> <u>COSTS ARE 1 2 3 4</u> or <u>RECURRING COSTS ARE 1-4.</u>	
K. REFURBISHMENT COSTS ARE -----  [Optional only for status-quo alternative in a primary analysis; if used, fill the blank with integer(s) corresponding to expense item(s) which is/are refurbishment cost(s).]	K. This identifies an expense item as a one-time cost (although it may take place over more than one year) for modifications, modernization, etc., required for continued operation of the status quo alternative.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
L. INVESTMENT COSTS ARE -----  [Optional only for proposed alternative in a primary analysis; if used, fill in the blank with integer(s) corresponding to expense item(s) which is/are investment cost(s).]	L. This identifies an expense item as an investment cost required for implementation of the proposed alternative being considered in a primary analysis.
M. INHERITED ASSETS ARE -----  [Optional only for proposed alternative in a primary analysis; if used, fill in the blank with integer(s) corresponding to expense item(s) which is/are inherited asset(s).]	M. This identifies an expense item as an inherited asset, which is an existing asset to be used as a part of the proposed alternative. An inherited asset cost is similar in concept to a one-time investment type cost. It is distinguished from other costs, though, in that no cash flow is associated with the item, while it still represents an expense in an indirect way.
N. REPLACED ASSETS ARE -----  [Optional only for proposed alternatives in a primary analysis; if used, fill in the blank with integer(s) corresponding to expense item(s) which is/are replaced asset(s).]	N. This identifies an expense item as an asset that is replaced as a part of the proposed alternative. It reflects a need that no longer exists. Because of the proposed alternative, it is "freed" for some other productive government use. An expense item that is a <u>REPLACED ASSET must be entered as a negative cost</u> , since the expense item describes a return to the government.

FILE INPUT MODE  
ALTERNATIVE INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
O. END ALTERNATIVE 1 [Required; enter, as shown, on a line by itself.]	O. This command is necessary to end the first alternative.
<hr/> If more than one alternative is analyzed (and this should be the case and <u>must</u> be the case in a primary analysis), the subsequent alternative sub-blocks begin with BEGIN ALTERNATIVE ____ and end with END ALTERNATIVE _____. The blanks are to be filled in with integers corresponding to the alternatives (2,3, etc.). <hr/>	
P. * [Required; enter as shown, on a line by itself.]	P. The asterisk is required to end the Alternative Information Block.

FILE INPUT MODE  
SOURCE/DERIVATION OF COSTS  
AND BENEFITS TEXT BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
VI. SOURCE/DERIVATION OF COST AND BENEFITS TEXT (Optional)	This block allows for narrative concerning all sources and derivations of costs and benefits for a particular economic analysis.
A. BEGIN SOURCE DERIVATION	
[Required if Source/Derivation of Cost and Benefits Text Block is used; enter, as shown, on a line by itself. On the next line, begin narrative; this field is unlimited in space.]	A. This command is necessary to signal the start of the the Source/Derivation of of Costs and Benefits Text Block.
B. TEXT	
[Required if Source/ Derivation of Cost and Benefits Text Block is used; enter as shown, on a line by itself.]	B. Type in text in paragraph format. Lines may not exceed 72 characters.
C. END SOURCE DERIVATION	
[Required if Source/Derivation of Cost and Benefits Text Block is used; enter as shown, on a line by itself.]	C. This command is necessary to signal the end of the narrative.
D. *	
[Required if Source/Derivation of Cost and Benefits Text Block is used; enter, as shown, on a line by itself.]	D. The asterisk is required to end the Source/ Derivation of Costs and Benefits Text Block.

FILE INPUT MODE  
GRAPHICS INFORMATION BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
VII. GRAPHICS INFORMATION (Optional)	A simple line plot of up to six alternatives may be created by utilizing the Graphics Information Block. There are no graphs produced if the block is not included in the input file. ECONPACK allows up to 4 separate graphs.
A. BEGIN GRAPHICS -- [Required if the Graphics Information Block is used; enter as shown, on a line by itself; fill in the blank with the integer ordinally denoting the graph to be plotted.]	A. This command is necessary to signal the beginning of the Graphics Information Block.

FILE INPUT MODE  
GRAPHICS INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENTS</u>	<u>EXPLANATION</u>
B. PLOT ALTERNATIVES ---- [Required if Graphics Information Block is used; fill in the blank with integer(s) corresponding to the alternative(s) to be graphed.]	B. Up to six alternatives per graph may be identified by number.
C. END GRAPHICS-- [Required if Graphics Information Block is used; enter, as shown, on a line by itself; fill in the blank with the same integer used in the corresponding BEGIN GRAPHICS command.]	C. This command is necessary to signal the end of the graphics information.

If more than one graph is desired, this three-step sequence may be repeated. For example, if the analyst desired one graph of Alternatives 1-3 and one graph of Alternatives 4-6, the correct data entry would be:

```
BEGIN GRAPHICS 1
PLOT ALTERNATIVES 1-3
END GRAPHICS 1
BEGIN GRAPHICS 2
PLOT ALTERNATIVES 4-6
END GRAPHICS 2
```

D. * [Required; enter, as shown, on a line by itself.]	D. The asterisk is necessary to signal the end of the Graphics Information Block.
---	---

FILE INPUT MODE  
SENSITIVITY ANALYSIS INFORMATION BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
VIII. SENSITIVITY ANALYSIS INFORMATION (Optional)	ECONPACK has a sensitivity analysis module which allows the analyst to systematically determine the extent to which changes in specified input values produce changes in conclusions. The analyst can direct the program to determine the percentage change (up or down), in a particular expense element, or group of expense elements, required to alter the ranking of the alternatives. ECONPACK allows up to 30 sensitivity analyses per EA.

FILE INPUT MODE  
SENSITIVITY ANALYSIS INFORMATION BLOCK  
(Continued)

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
A. BEGIN SENSITIVITY ANALYSIS --  [Required if sensitivity analysis is performed; fill in the blank with the integer ordinally denoting the sensitivity anslysis to be performed.]	A. This command is required to begin the Sensitivity Analysis Information Block.
B. TITLE IS '-----' [Required if sensitivity analysis is performed; fill in the blank with a title, enclosed in single quotes; limited to 60 characters.]	B. This statement is used to describe the sensitivity analysis to be performed.
C. ALTERNATIVES ARE -- [Required if sensitivity analysis is performed; fill in the blank with integers corresponding to the two alternatives to be involved in the analysis.]	C. This statement is used to identify which two alternatives are to be involved in the sensitivity analysis.
D. CHANGE ----- [Required if sensitivity analysis is performed; fill in the blank with integers indicating the alternative and expense items within that alternative to be changed; up to 2 CHANGE commands are allowed.]	D. The CHANGE command is used to select which expense items are to be changed for the sensitivity analysis. <u>AVOID</u> including expense items which include negative numbers in an ECONPACK sensitivity analysis. Unusual calculation sequence and comparison logic may follow, which can be misleading.



FILE INPUT MODE  
SENSITIVITY ANALYSIS INFORMATION BLOCK  
(Continued)

---

BLOCK/COMPONENT

EXPLANATION

---

EXAMPLE 1:

CHANGE 1 1 2 means  
that Expense Items  
1 and 2 in Alternative  
1 are to be changed  
in the sensitivity  
analysis.

EXAMPLE 2:

An alternative shorthand  
method for the entry in  
EXAMPLE 1 would be  
CHANGE 1 1-2

E. LIMIT IS ----  
[Optional; if used,  
fill in the blank  
with the maximum  
upper limit for the  
sensitivity analysis,  
expressed in  
percentage terms.]

E. This command sets the maximum  
positive change for the  
sensitivity test. For example,  
LIMIT IS 100 means that the  
expense elements involved in  
the sensitivity analysis (per the  
CHANGE command) are to be  
changed no more than +100%  
(twice the initial value).  
The maximum positive change is  
200%; i.e., a tripling of the  
initial value. The negative  
change is automatically set at  
100% (reduction to zero).

FILE INPUT MODE  
SENSITIVITY ANALYSIS INFORMATION BLOCK  
(Continued)

<u>BLOCK</u>	<u>EXPLANATION</u>
F. RANK ALTERNATIVE -- [Required if sensitivity analysis is performed; fill in the blank with the integer corresponding to the alternative to be ranked first -- least cost; this should be different from the alternative currently ranked least cost.]	F. This command selects the alternative which the analyst wishes to be ranked at least cost in the sensitivity test. For example, RANK ALTERNATIVE 2 indicates that the ECONPACK will check to see how much of a change in the indicated expense items will be required to result in the second alternative being least cost among those alternatives selected in the sensitivity analysis block.
G. END SENSITIVITY -- [Required if the Sensitivity Analysis Information Block is used; fill in the blank with the same integer used in the corresponding BEGIN SENSITIVITY command.]	G. This command is required to signal the end of a sensitivity analysis information.

ECONPACK allows up to 30 sensitivity analyses per economic analysis. If more than one sensitivity analysis is desired, the user should repeat the steps above.

- |   |  |
|---|--|
| H. *  | H. The asterisk is required to signal the end of the Sensitivity Analysis Information Block. |
| [Required; enter, as shown, on a line by itself.] |  |

FILE INPUT MODE  
MAJOR INPUT BLOCKS: RESULTS AND RECOMMENDATIONS TEXT BLOCK

<u>BLOCK/COMPONENT</u>	<u>EXPLANATION</u>
IX. RESULTS AND RECOMMENDATIONS (Optional)	This block is used by the analyst to discuss, in narrative format, all results and recommendations.
A. BEGIN RESULTS [Required if Results and Recommendations Text Block is used; enter, as shown, on a line by itself; on the next line, begin narrative; this field is unlimited in space.]	A. This command is required to signal the beginning of the Results and Recommendations Text Block.
B. RESULTS AND RECOMMENDATIONS TEXT [Required if Results and Recommendations Text Block is used.]	B. Type in text in paragraph format. Lines may not exceed 72 characters.
C. END RESULTS [Required if Results and Recommendations Text Block is used; enter, as shown, on a line by itself.]	C. This command is required to signal the end of the results and recommendations narrative.
D. * [Required if Results and Recommendations Text Block is used; enter, as shown, on a line by itself.]	D. The asterisk is necessary to signal the end of the Results and Recommendations Text Block

FILE INPUT MODE  
ENDING COMMAND

<u>COMPONENT</u>	<u>EXPLANATION</u>
A. STOP RUN [Required; enter, as shown, on a line by itself.]	A. This command is necessary to signal the end of the input file.

7.3 Creating An Input File and Report File Using the File Input Mode: Specific instructions for creating an input file and report file using the file input mode are given in this section. Briefly, the user must perform the following tasks:

- TASK 1: Access ECONPACK (or access the DD Form 1391 Processor System).
- TASK 2: Access the CMS environment from the MAIN ECONPACK MENU or respond to the question regarding the Huntsville Division bulletin and acquire a Time-of-Day prompt.
- TASK 3: Enter the edit mode by entering EDIT (fn) FT75F001 <CR> at a C> or Time-of-Day>.
- TASK 4: Enter the input mode by entering I <CR> at an E prompt.
- TASK 5: Create your input file.
- TASK 6: Exit the input mode by entering <CR> at the last I prompt.
- TASK 7: File the input file created in TASK 6 by entering FILE <CR> at an E prompt.
- TASK 8: Return to the MAIN ECONPACK MENU by entering ECONPACK <CR> at a C> or Time-of-Day>.
- TASK 9: [This task is not necessary for non-DD Form 1391 Processor System users.] Enter your System IDENT word.
- TASK 10: Check the manual input file for errors by accessing Option 5 from the MAIN ECONPACK MENU.
- TASK 11: Generate economic analysis reports by entering Option 3 from the MAIN ECONPACK MENU.
- TASK 12: Print desired economic analysis reports.
- TASK 13: Return to MAIN ECONPACK MENU.
- TASK 14: Exit ECONPACK.
- TASK 15: Log off the PAX System.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 1: ACCESS ECONPACK (OR ACCESS THE DD FORM 1391 PROCESSOR SYSTEM).

---

PAX SYSTEM MENU

1. ECONPACK
2. PAXMAIL
3. CAPCES
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

System transfers the user from the PAX System to the ECONPACK System.

PAX>1 <CR>

or

PAX SYSTEM MENU

1. CAPCES
2. PAXMAIL
3. DD1391 PROCESSOR
4. PRINT PAX NEWSLETTER
5. CHANGE PASSWORD

System transfers the user from the PAX System to the DD Form 1391 Processor System

PAX>3 <CR>

NOTE: It is recommended that users with DD Form 1391 Processor System on their PAX System Menu use the second method. This allows for an easier transfer of the ECONPACK report file to the DD Form 1391 at Block SR1.

It is also suggested that users with both ECONPACK and DD Form 1391 Processor System on their PAX System Menus move all files to the DD Form 1391 Processor and request that ECONPACK be removed from their PAX System Menu. This will reduce confusion, time, and cost.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 2: ACCESS THE CMS ENVIRONMENT OR RESPOND TO THE QUESTION  
REGARDING THE HUNTSVILLE DIVISION BULLETIN AND ACQUIRE  
A TIME-OF-DAY PROMPT.

---

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING  
INPUT FILE
3. GENERATE ECONOMIC ANALYSIS  
REPORTS
4. PRINT ECONOMIC ANALYSIS  
REPORTS
5. CHECK MANUAL INPUT FILE  
FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

User is transferred to a C  
prompt or a Time-of-Day  
prompt where a file can  
be created/changed without  
the use of the terminal  
prompting sequence.

ENTER DESIRED OPTION>8 <CR>

or

WOULD YOU LIKE TO READ HUNTSVILLE DIV.  
BULLETINS LAST UPDATED:  
DATE: 10/16/87  
TIME: 08:50

(Y/N)>N <CR>

TYPE HELP FOR AN EXPLANATION OF THE  
COMMANDS AVAILABLE TO YOU.

07:18:47>\_\_\_\_\_

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 3: ENTER THE EDIT MODE.

---

User enters the edit mode to create a new file or edit an existing file.

C>EDIT [filename FT75F001] <CR>

or

14:23:20>EDIT [filename FT75F001] <CR>

[NOTE: Just as in the terminal prompting mode, the filename may be any combination of 8 or fewer characters.]

---

TASK 4: ENTER THE INPUT MODE.

---

NEW FILE:

System transfers user to input mode and gives an I>.

E>I <CR>

The computer/user interaction is the same regardless of how ECONPACK was accessed.

---

TASK 5: CREATE AN INPUT FILE AS DESCRIBED IN THIS CHAPTER.

---

I>\_\_\_\_\_<CR>

User creates desired file. Data entered at an I> will be taken as text.

.  
.  
.

I>\_\_\_\_\_<CR>

The computer/user interaction is the same regardless of how ECONPACK was accessed.



Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 6: EXIT THE INPUT MODE.

---

I><CR>  
E>

A <CR> entered at an I>  
returns user to the edit  
mode.

The computer/user interaction  
is the same regardless of how  
ECONPACK was accessed.

---

TASK 7: FILE THE INPUT FILE JUST CREATED.

---

E><FILE <CR>

Causes the temporary file  
to become a permanent file  
on the user's ECONPACK  
permanent disk and  
returns the user to a C>  
or to a Time-of-Day>.

---

TASK 8: RETURN TO MAIN ECONPACK MENU.

---

C><ECONPACK <CR>

or

15:20:10><ECONPACK <CR>

System transfers user  
to the MAIN ECONPACK MENU.

Non-DD Form 1391 System  
Processor System users  
proceed to TASK 10.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 9: ENTER SYSTEM IDENT WORD.

---

IDENTIFICATION:> [Enter your System IDENT word.]

YOU HAVE JUST ENTERED  
ECONPACK AS:

---

After IDENT word is  
entered, system transfers  
user to the MAIN ECONPACK  
MENU.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 10: CHECK THE MANUAL INPUT FILE FOR ERRORS.

---

\*\*\*\* MAIN ECONPACK MENU\*\*\*\*

- |  |  |
|--|--|
| 1. CREATE AN INPUT FILE                    | System indicates ECONPACK reports may be generated or prints error messages. If errors exist, they must be corrected prior to generating ECONPACK reports. |
| 2. ADD TO OR CHANGE AN EXISTING INPUT FILE |  |
| 3. GENERATE ECONOMIC ANALYSIS REPORTS      |  |
| 4. PRINT ECONOMIC ANALYSIS REPORTS         |  |
| 5. CHECK MANUAL INPUT FILE FOR ERRORS      |  |
| 6. FILE MAINTENANCE                        |  |
| 7. HELP FACILITY                           |  |
| 8. CMS                                     |  |
| 9. EXIT TO PAX MENU                        |  |

ENTER DESIRED OPTION>5 <CR>

PLEASE ENTER YOUR INPUT  
FILENAME>[Enter your input filename.] <CR>

or

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTIONS>5 <CR>

PLEASE ENTER YOUR INPUT  
FILENAME>[Enter your input filename.] <CR>

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 11: GENERATE ECONOMIC ANALYSIS REPORTS.

---

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

System prompts user to select an option number. 3 entered at the option prompt initiates the generation of economic analysis reports. 9 entered at the option prompt returns the user to the PAX System or, if within the DD Form 1391 Processor System, 8 will return user to a Time-of-Day prompt.

ENTER DESIRED OPTION>3 <CR>

or

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTIONS>3 <CR>

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION

EXPLANATION

---

TASK 12: PRINT DESIRED ECONOMIC ANALYSIS REPORTS.

---

AVAILABLE ECONPACK REPORTS

1. PRINT ALL REPORTS
2. PRINT EXECUTIVE SUMMARY  
OF ANALYSIS
3. PRINT COMPARISON PLOTS
4. PRINT LIFE CYCLE COST  
COMPARISON REPORTS
5. PRINT SENSITIVITY ANALYSIS  
REPORTS
6. PRINT INPUT LISTINGS
7. RETURN TO MAIN ECONPACK MENU

User enters integer(s)  
corresponding to desired  
report(s), followed by  
a <CR>.

EXAMPLE:

If user wanted the  
executive summary report  
and the comparison plot  
printed, the correct entry  
would be: >2-3 <CR>.

ENTER DESIRED OPTIONS>\_\_\_\_\_

[Enter option number corresponding to desired report.] <CR>

Computer/user interaction is the  
same regardless of how ECONPACK  
was accessed.

EXAMPLE:

If user wanted the  
executive summary report  
and the comparison plot  
printed, the correct entry  
would be: >2-3 <CR>.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

TASK 13: RETURN TO MAIN ECONPACK MENU.

---

AVAILABLE ECONPACK REPORTS

1. PRINT ALL REPORTS
2. PRINT EXECUTIVE SUMMARY  
SUMMARY OF ANALYSIS
3. PRINT COMPARISON PLOTS
4. PRINT LIFE CYCLE COST  
COMPARISON REPORTS
5. PRINT SENSITIVITY ANALYSIS  
REPORTS
6. PRINT INPUT LISTINGS
7. RETURN TO MAIN ECONPACK MENU

System presents this menu  
after printing reports  
requested in TASK 12.  
User may select another  
option or exit to the MAIN  
ECONPACK MENU.

ENTER DESIRED OPTIONS>7 <CR>

Computer/user interaction is  
the same regardless of how  
ECONPACK was accessed.

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

TASK 14: EXIT ECONPACK.

---

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN  
EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS  
REPORTS
4. PRINT ECONOMIC ANALYSIS  
REPORTS
5. CHECK MANUAL INPUT FILE  
FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. CMS
9. EXIT TO PAX MENU

System transfers user to  
PAX System Menu or DD Form  
1391 Processor System. User  
may execute another MAIN  
ECONPACK MENU option at  
this prompt if so desired.

ENTER DESIRED OPTION>9 <CR>

or

\*\*\* MAIN ECONPACK MENU \*\*\*

1. CREATE AN INPUT FILE
2. ADD TO OR CHANGE AN  
EXISTING INPUT FILE
3. GENERATE ECONOMIC ANALYSIS REPORTS
4. PRINT ECONOMIC ANALYSIS REPORTS
5. CHECK MANUAL INPUT FILE  
FOR ERRORS
6. FILE MAINTENANCE
7. HELP FACILITY
8. EXIT TO DD1391 PROCESSOR SYSTEM

ENTER DESIRED OPTION>8 <CR>

Creating An Input File and Report File Using the File Input Mode  
(Continued)

---

COMPUTER/USER INTERACTION	EXPLANATION
---------------------------	-------------

---

TASK 15: LOG OFF THE PAX SYSTEM.

---

PAX SYSTEM MENU

- |                         |                |
|-------------------------|----------------|
| 1. ECONPACK             | User logs off. |
| 2. PAXMAIL              |                |
| 3. DD1391 PROCESSOR     |                |
| 4. PRINT PAX NEWSLETTER |                |
| 5. CHANGE PASSWORD      |                |

PLEASE ENTER --- 1 THRU 5 OR LOG>LOG <CR>

[Terminate communications connection.]

or

\*\*\* LEAVING ECONPACK \*\*\*

07:54:02>LOG <CR>

RUN FILE 3149 TO TRACK3 COPY 001 NOHOLD  
PROJECT 1391  
CONNECT = 00:02:28 TRU= 29.08 TIO= 3,066

PAX SYSTEM MENU

- |                         |
|-------------------------|
| 1. ECONPACK             |
| 2. PAXMAIL              |
| 3. DD1391 PROCESSOR     |
| 4. PRINT PAX NEWSLETTER |
| 5. CHANGE PASSWORD      |

PLEASE ENTER ----- 1 THRU 5 OR LOG

PAX>LOG <CR>

PROJECT PAX  
CONNECT = 00:00:19 TRU = 2.57 TIO= 362  
LOGOFF AT 07:54:40 CDT THURSDAY 10/08/87

PLEASE LOG IN [Terminate communications connection.]



CHAPTER 8  
TRANSFERRING A COPY OF AN ECONPACK  
REPORT FILE TO THE SPECIAL REQUIREMENTS  
PARAGRAPH 1 BLOCK IN THE DD1391 FORM

8.0 TRANSFERRING A FILE

8.1 Introduction: This chapter contains procedures for transferring a copy of an ECONPACK report file to the Special Requirements Paragraph 1 (SR1) Block in a DD1391 Form. The procedure is explained from two vantage points: transferring the report file while at the monitor ready prompt of the DD Form 1391 Processor System and transferring the report file while within the Special Requirements Paragraph 1 Block of the DD1391 Form.

8.2 Transferring From the Monitor Ready Prompt of the DD Form 1391 Processor System: This section contains procedures for transferring an ECONPACK report file from the monitor ready prompt of the DD Form 1391 Processor System.

At the monitor ready prompt, the user enters the command, DD1391. The computer requests the IDENT word. After receiving this information, the computer responds with a monitor ready prompt.

EXAMPLE

14:25:05>DD1391 <CR>  
ALREADY MONITORING PROCESS.

\*\*\*\*\* WELCOME TO THE DD1391 PROCESSOR!  
\*\*\*\*\* VERSION 7.1 (21 FEB 8)

IDENTIFICATION: >[Enter your IDENT word.]

YOU HAVE JUST ENTERED INTO THE PROCESSOR AS:

---

MONITOR READY>\_\_\_\_\_

Use the monitor ready command, SR1, to move a copy of an ECONPACK report file to Special Requirements Paragraph 1 in a DD1391 Form.

EXAMPLE:

MONITOR READY>SR1 FORM XXXXX <CR>

PLEASE ENTER FILENAME OF ECONOMIC ANALYSIS TO BE ENTERED.  
[NOTE: AN ECONOMIC ANALYSIS REPORT MUST HAVE BEEN GENERATED FROM THE ECONPACK PROGRAM.] ENTER FILENAME OR <CR> TO RETURN TO THE MONITOR READY PROMPT>. [Enter input filename.]

YOUR ECONOMIC ANALYSIS WILL BE ENTERED INTO BLOCK SR1. DO YOU WISH TO CONTINUE (YES/NO)?>Y <CR>

PLEASE WAIT - THANK YOU.  
NOW PROCESSING YOUR INSTRUCTION....

NOW PROCESSING YOUR INSTRUCTION....

YOUR ECONOMIC ANALYSIS REPORT FILE HAS BEEN INSERTED INTO SR1 OF FORM XXXXX.

YOUR ECONOMIC ANALYSIS INPUT FILE HAS BEEN STORED AS XXXXX ON THE ECONPACK COMMON DIRECTORY.

MONITOR READY>\_\_\_\_\_

Users should consult pages \_\_\_\_ to learn how to modify an ECONPACK report file once it has been entered into Special Requirements Paragraph 1.

8.3 Transferring While Within the SR1 Block: This section contains procedures for obtaining an ECONPACK report file while within the Special Requirements Paragraph 1 (SR1) Block of the DD1391 Form.

At Block SR1, the computer requests that the user enter one of a series of commands. The user will respond by entering ECON <CR> at the form editor prompt (=>).

EXAMPLE:

SPECIAL REQUIREMENTS PARAGRAPH 1

ENTER ONE OF THE FOLLOWING:

1. AN EDITOR COMMAND - /SAVE,/GOTO,ETC.
2. THE WORD 'EDIT' - TO INPUT NEW OR CHANGE EXISTING TEXT
3. THE WORD 'ECON' - TO LOAD ECONPACK GENERATED DATA
4. THE WORD 'DELETE' - TO ERASE ALL DATA IN THIS BLOCK
5. A CARRIAGE RETURN - TO ADVANCE TO THE NEXT BLOCK.

=>ECON <CR>

The computer will request that the filename of the economic analysis be entered. The user should enter the appropriate filename.

EXAMPLE:

PLEASE ENTER FILENAME OF ECONOMIC ANALYSIS TO BE ENTERED. [NOTE: AN ECONOMIC ANALYSIS REPORT MUST HAVE BEEN GENERATED FROM THE ECONPACK PROGRAM.] ENTER FILENAME OR <CR> TO RETURN TO THE SR1 MENU.>FILE <CR>

The computer notifies the user that the economic analysis report was entered into Block SR1 and asks if the user would like to continue.

EXAMPLE:

YOUR ECONOMIC ANALYSIS WILL BE ENTERED INTO BLOCK SR1. DO YOU WISH TO CONTINUE (YES/NO)?>Y <CR>

The computer again prompts for one of a series of commands. Assuming the user is ready to log off, /SAVE <CR> should be entered.

EXAMPLE:

SPECIAL REQUIREMENTS PARAGRAPH 2

ENTER ONE OF THE FOLLOWING:

1. AN EDITOR COMMAND - /SAVE,/GOTO,ETC.
2. THE WORD 'EDIT' - TO INPUT NEW OR CHANGE EXISTING TEXT
3. A CARRIAGE RETURN - TO ADVANCE TO THE NEXT BLOCK.

=>/SAVE <CR>

The computer responds by displaying the name, office, and phone number of the form preparer, asking if a change in any of these three items is desired, processing the SAVE instruction, notifying the user that the form was saved, and returning the user to a monitor ready prompt.

EXAMPLE:

PREPARED BY = XXX, XXX, XXX  
DO YOU WANT TO CHANGE NAME, OFFICE, OR PHONE? (YES/NO) =>N <CR>  
PLEASE WAIT .... - THANK YOU.

NOW PROCESSING YOUR INSTRUCTION....

NOW PROCESSING YOUR INSTRUCTION....

NOW PROCESSING YOUR INSTRUCTION....

YOUR ECONOMIC ANALYSIS REPORT FILE HAS BEEN INSERTED INTO  
SR1 OF FORM XXXXX.

YOUR ECONOMIC ANALYSIS INPUT FILE HAS BEEN STORED AS XXXXX  
ON THE ECONPACK COMMON DIRECTORY.

FORM XXXXX SAVED.

MONITOR READY >\_\_\_\_\_

[When the user enters the command, ECON, a copy of the ECONPACK input file will be placed on the Common Directory available to all users, a copy of the report file will be placed into SR1 on the recalled DD1391 Form, and the input and report files will be erased from the user's DD1391 Form permanent disk.]

## APPENDIX A

### GLOSSARY

**ALTERNATIVE:** A course of action, means, or methods by which an objective may be achieved.

**ALTERNATIVE RANKING:** The end result of ECONPACK's economic analysis. ECONPACK ranks each alternative sequentially from lowest cost to highest cost.

**ASSUMPTIONS:** Explicit statements used to describe the present and future environment upon which the economic analysis is based.

**BASE YEAR:** The reference year for all present value calculations (costs are converted to present value amounts as of the beginning of the base year).

**BENEFITS:** Outputs or effectiveness expected to be received or achieved over time as a result of undertaking a proposed investment. These can be quantifiable or non-quantifiable.

**BENEFIT/COST RATIO (BCR):** An economic indicator of efficiency, computed by dividing benefits by costs. When benefits are quantified in dollar terms, discount both the benefit stream and the cost stream to reflect the present value of future costs and benefits.

**COMPOUND INTEREST:** Interest which is computed on both the original principal and its accrued interest.

**CONSTANT DOLLARS:** An estimate is said to be in constant dollars if costs reflect the level of prices of a base year.

**COST:** A resource input to a project, program, or activity expressed in dollar terms. See Expense Item.

**COST BENEFIT ANALYSIS:** A technique for assessing the range of costs and benefits associated with a given option, usually to determine feasibility. Costs are generally in monetary terms, but benefits need not be in monetary terms.

**CUMULATIVE NET PRESENT VALUE:** The sum total of the discounted annual cost for the year in question and all preceding years of the project.

**CURRENT DOLLARS:** When prior costs are stated in current dollars, the figures given are the actual amounts paid out. When future costs are stated in current dollars, the figures given are the actual amounts expected to be paid, including any amount caused

by future price changes.

**DIFFERENTIAL INFLATION:** The difference in inflation between the inflation rate for the overall economy and the rate of inflation for a particular expense item which is either greater than or less than the general inflation rate.

**DISCOUNTING CONVENTION:** The method of discounting costs, either beginning of year, middle of year or end of year.

**DISCOUNT RATE:** The interest rate used to relate present and future dollars. This rate is expressed as a percentage and is used to reduce the value of future dollars in relation to present dollars to account for the time value of money.

**DISCOUNTED PAYBACK PERIOD:** A technique for determining the time period over which accumulated present value savings are enough to offset the total present value of investment costs of a proposed alternative to the status quo.

**ECONOMIC ANALYSIS:** A systematic method for quantifying the costs and/or benefits of proposed projects. Basically, it consists of seven steps: stating the objective, listing assumptions, defining alternatives, determining costs and benefits, comparing and ranking alternatives, performing a sensitivity analysis, and writing a report with recommendations.

**ECONOMIC LIFE:** The period of time over which the benefits from an alternative are expected to accrue. The economic life of an alternative may be limited by its mission life or physical life.

**EQUIVALENT UNIFORM ANNUAL COST (EUAC):** The amount of money which, if paid in equal annual installments over the life of a project, would pay for the project. That is, the discounted value of this hypothetical uniform cost stream is equal to the actual estimated present value of project costs. The alternative with the lowest uniform annual equivalent amount is the least-costly alternative.

**EXPENSE ITEM:** A term used by ECONPACK to represent individual expenditures (costs). Each ECONPACK alternative is composed of one or more expense items, which must be assigned a monetary value for each year of the project's period of analysis. See Cost.

**HISTORICAL COST:** A cost based on actual asset outlay, determined after the fact. Any method of cost determination may be used, but the sources of costs must be documented in the source derivation part of the output report.

**INFLATION:** A persistent rise in the general level of prices over time.

**INPUT FILE:** A file which lists the objective of an economic analysis, alternatives, expense items, and other data needed to perform the analysis.

**INTEREST:** A price (or rent) charged for the use of money.

**INVESTMENT COST:** One-time costs associated with acquisition of real property, nonrecurring services, nonrecurring operations, and maintenance (start-up) costs and other one-time costs. Despite their one-time nature, investment costs may extend over periods of more than one year. For military construction economic analyses, this is the project's programmed amount as identified on the DD Form 1391.

**LEAD TIME:** The period of elapsed time between initial funding or decision and the commencement of the economic life.

**LIFE CYCLE:** The time from the beginning date of the project to the end of the program/project life.

**LIFE CYCLE COST:** The total cost of an item over its life cycle. This includes initial investment, maintenance and repair, operations, utilities and, where applicable, disposal.

**MAINTENANCE AND REPAIR COST:** The total of labor, material, and other costs of performing corrective and preventive maintenance and repair on a facility and/or its systems and components.

**NET PRESENT VALUE:** A cumulative discounted value amount that also accounts for the discounted value of the residual amount.

**NONRECURRING COST:** Cost which occurs on a one-time basis; to be distinguished from annually recurring costs.

**OBJECTIVE:** The result the decision maker wants to attain. It is the desired end product of a program and must be stated in an unbiased way, e.g., "to house 400 additional personnel," not "to build a 400-person barracks."

**OUTPUT:** The products, functions, tasks, services, or capabilities which an organization exists to produce, accomplish, attain, or maintain.

**PERIOD OF ANALYSIS:** The time span over which the economic analysis takes place; i.e., the number of years over which the alternatives' costs are compared. (ECONPACK allows a maximum of 60 years.)

**PHYSICAL LIFE:** The estimated number of years that a machine, piece of equipment, or building can physically be used in accomplishing the function for which it was procured or constructed.

**PRESENT VALUE:** A monetary expenditure (or savings) multiplied by the discount factor. The resulting figure represents the worth of the future amount in base year dollars. (The discount factor depends on both the discount rate and the period of time until the expenditure occurs.)

**PRESENT VALUE OF SALVAGE:** The salvage value of an alternative, discounted to represent its value in base year dollars. ECONPACK discounts the salvage value from the final year of the project to the beginning of the start year.

**PRESENT WORTH:** Same as present value.

**PROJECT:** A major mission-oriented agency endeavor which fulfills statutory or executive requirements, and which is defined in terms of the principal actions required to achieve a significant end objective.

**PROJECT LIFE:** The lead time plus the economic life.

**RECURRING COSTS:** Expenses for personnel, material consumed in use, operating overhead, support services, and other items which recur annually in the execution of a given program or work effort.

**REPORT FILE:** Once an input file has been run through ECONPACK, a report file representing the results of the analysis is created.

**RESIDUAL VALUE:** The remaining monetary value, if any, of an alternative at a specified point in time.

**SALVAGE VALUE:** The remaining monetary value, if any, of a project at the end of the project life. The value may be negative (i.e., it may cost dollars to remove the item).

**SAVINGS TO INVESTMENT RATIO (SIR):** The ratio of discounted future cost savings (or avoidance) to the discounted investment cost necessary to effect those savings. An SIR of 1 indicates that the present value of savings is equal to the present value of investment.

**SENSITIVITY ANALYSIS:** A method for determining how changes in expense item costs will affect the ranking of alternatives.

**START YEAR:** The first year of the period of analysis.

**SUNK COST:** An unrecoverable past cost which was incurred before the baseline date. Because sunk costs have been irrevocably expended or committed, they have no significance in the ranking of alternatives.



TERMINAL VALUE: The expected value of land, buildings, or equipment at the end of economic life or project life. (Same as salvage value or residual value at the end of the project life.)

TIME VALUE OF MONEY: The use of money costs money: a dollar today is worth more than a dollar tomorrow because of the interest costs related to expenditures and benefits which occur over time. Annual savings or cash inflows projected for tomorrow have present values less than their undiscounted dollar values.

TOTAL ANNUAL OUTLAYS: The sum total of all costs for a given year.

UNIFORM ANNUAL COST (UAC): See Equivalent Uniform Annual Cost.

APPENDIX B  
VENDOR COMMUNICATIONS SPECIFICS

B.0 VENDOR COMMUNICATIONS SPECIFICS

B.1 General: This appendix provides instructions unique to the system vendor.

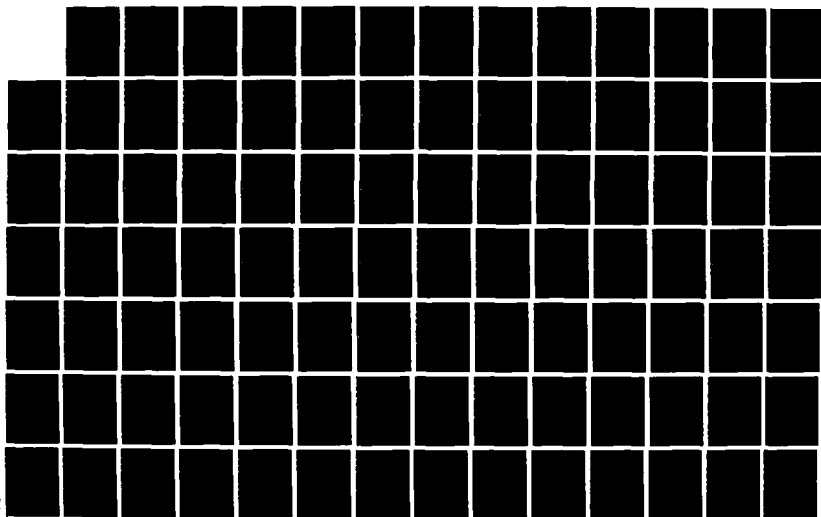
B.2 Terminal Identifiers: Before a user can gain access to the host computer, a specific alphabetic character must be entered to indicate the type of equipment being used to access the system. This character is identified as the TERMINAL IDENTIFIER. Table B-1 lists the terminal identifier to be entered for specific types of terminals. Table B-2 lists terminal identifiers according to specific manufacturers and models. For equipment not listed in Table B-2, it is recommended the user first enter the terminal identifier "A". If that is ineffective, the identifier "E" should be entered.

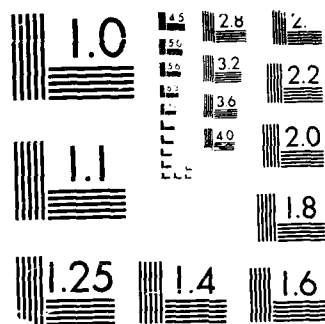
AD-A132 349 PAR ECONOPACK ECONOMIC ANALYSIS PACKAGE USERS MANUAL 473  
(U) ARMY ENGINEER DIV HUNTSVILLE AL H W MASON FEB 88  
HNDSP-86-117-ED-ES-REV

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F/G 5/3

ML





MICROCOPY RESOLUTION TEST CHART  
NBS 1963-A

TABLE B-1

## Terminal Identifiers According To Terminal Type

<u>IDENTIFIER</u>	<u>CODE</u>	<u>SPEED</u>	<u>TERMINAL TYPE</u>
A	ASCII	300 BAUD 1200 BAUD	*CRT
B	ASCII	150 BAUD	ALL TERMINALS
C	ASCII	300 BAUD	IMPACT PRINTERS
D	ASCII	100 BAUD	ALL TERMINALS
E	ASCII	300 BAUD	TERMINAL PRINTERS
F	ASCII	150 BAUD IN 300 BAUD OUT	BETA TERMINALS
G	ASCII	300 BAUD 1200 BAUD	BELT PRINTERS GE TERMINALS
I	ASCII	1200 BAUD	MATRIX PRINTERS
P (CR)	EBCD CORRESPONDENCE	148 BAUD	SELECTRIC-TYPE TERMINALS (eg. 2741)

\*The terminal identifier "A" is used for terminals not requiring a carriage return or line feed delay, such as a CRT terminal. "A" is also used for terminals with buffers, such as the Tymshare 325 and the TI 820.

TABLE B-2

## Terminal Identifiers According To Manufacturer/Model

<u>TERMINAL</u> <u>MANUFACTURER/MODEL</u>	<u>TI</u>	<u>TERMINAL</u> <u>MANUFACTURER/MODEL</u>	<u>TI</u>
ADDS		DEC	
580, 620, 680, 880, 980,....	A	GT40, LA34, LA36, LA38, *LA120, *LS120, VT05 VT50, VT100, VT132.....	A
ANDERSON JACOBSON		DATAMEDIA	
330.....	(CR)	DATAPPOINT	
830, 832.....	A	1500, 2000, 2100, 2500.....	A
630.....	E	1100, 3000, 3300.....	A
*860.....	A		
ANN ARBOR TERMINALS		DATA DATA	
DESIGN III 200.....	A	5000, 5100, 5200.....	A
BEEHIVE MEDICAL ELECTRONICS		DIGI-LOG	
MINI AEE 1, 2, 4.....	B	33, 209, 300.....	A
SUPER BEE 2, 3.....	A	GENERAL ELECTRIC	
I-211, M-501, R-211.....	A	TERMINET	
BELL SYSTEM		300, 1200.....	G
DATASPEED 40/12		GEN-COM	
KD.....	A	300.....	A
KDP.....	G	HAZELLINE	
COMPUTER DEVICES		1200, 2000.....	A
1030.....	E	HYDRA	
1132, 1201, 1202, 1203		MODEL B.....	I
1204, 1205, 1206.....	A	SERIES, 7220A.....	A
COMPUTEK		IBM	
200, 300.....	A	2741.....	P(CR)
CONRAC		INTERDATA	
401, 408.....	A	CAROUSEL 300.....	E
CONTROL DATA		INCOTERM	
713.....	A	SPD 10120, 20120, 900.....	A
COMPUTER TRANSCIEVER		INFOTON	
SYSTEMS		VISTAR.....	A
EXECUPORT.....	E		

<u>TERMINAL</u>	<u>MANUFACTURER/MODEL</u>	<u>TI</u>
ITT		
	35501 ASCISCOPE.....	A
LEAR SIEGLER		
	7700,ADM-1,ADM-2	
	ADM-3,ADM-31.....	A
LOGABAX INFORMTIQUE		
	LX180.....	I
	*LX1010.....	A
	MI	
	*2400.....	I
MEGADATA.....		A
MEMOREX		
	1240.....	G
NCR		
	260.....	E
	796.....	A
OMRON		
	8525.....	A
ONTEL		
	4000.....	A
PERKIN-ELMER		
	1200,1250.....	A
RESEARCH		
	TELERAY 3300,3311,3712.....	A
RAYTHEON		
	PTS-100.....	A
SINGER		
	30.....	E
SCIENTIFIC MEASUREMENT SYSTEMS		
	1400.....	A
TALLY		
	*1612.....	A

<u>TERMINAL</u>	<u>MANUFACTURER/MODEL</u>	<u>TI</u>
TEC		
	400 SERIES, 1440	
	4012,4013,4014,4023.....	A
TEKTRONIC		
	4025.....	A
TELETYPE		
	33,34.....	D
	38.....	B
	43.....	A
TEXAS INSTRUMENTS		
	720,725,733,735	
	743,745,763,765,771.....	E
	820.....	A
TEXAS SCIENTIFIC		
	ENTELKON 10.....	A
TYPAGRAPH		
	DP-30.....	C
TYMSHARE		
	100,110,212,213.....	E
	310,311.....	C
	125,126,225,315,316	
	200.....	C
	325,*350,420,*425,430	
	440W,444,*470,	
	*550,*1100.....	A
WANG LABORATORIES		
	220 OB.....	A
WESTINGHOUSE		
	1600,1620.....	A
XEROX		
	BC100,BC200.....	A

\*When logging on to the computer using these terminals, the user must depress both the CONTROL key and the letter "R" key before entering the System User ID.

B.3 Additional Communication Parameters: Some word processors and microcomputers require additional information in order to connect to the McDonnell-Douglas System. Listed below are some additional communication parameters.

Code	-	ASCII
Duplex	-	full
Parity	-	mark or none
Parity bits	-	1
Word length	-	7
Start bits	-	1
Stop bits	-	1
Baud	-	300 or 1200
Modem	-	Many phone numbers are compatible with any 300 baud mode, 1200 baud BELL, and Vadic modems. (Check phone numbers listed in PAX NEWSLETTERS).
End of line (transmit to McDonnell- Douglas)	-	CR
End of line (transmit to McDonnell- Douglas)	-	CRLF (LF)

Some terminals require the use of control characters before the user enters the System User ID at the PLEASE LOG IN: prompt. The control characters are accessed by simultaneously depressing the control (CTRL) key and the alphabet key.

CTRL X	-	Entered for terminal transmission from paper tape, cassette, internal buffer, or disk to request that McDonnell-Douglas control the flow of terminal output with X-ON (DC-1, CTRL Q) and X-OFF (DC-3, CTRL S) to prevent data loss.
CTRL H	-	Initiates half duplex operation by suppressing McDonnell-Douglas echoing of input characters.



- CTRL P - Provides for even parity for computer output rather than no parity.
- CTRL R - Allows terminal control of received data flow with X-ON (DC-1, CTRL Q) to signal terminal ready and X-OFF (DC-3, CTRL S), to signal terminal busy.

B.4 Line Noise: Sometimes a user may have trouble with noise, i.e., random characters showing up in the print. Often the source of the noise can be very difficult to determine. Presented below are some possible solutions to noise problems:

- Poor connection - Try hanging up the phone and redialing.
- Poor phone line - Some buildings have poor phone lines. If possible, try using a phone in a different building.
- Noisy power supply - Large ventilating units, welders, motors, etc. can transmit electrical noise over power lines to computer equipment. The computer terminal should be on a separate circuit. Try operating the terminal in a different location. An isolation transformer may help.
- Installation PBX (Switchboard) - Some installation switchboards add noise to telephone lines. A direct off-post line may improve the noise problem. A direct line is one where a special access code is not required to dial a commercial number.
- 1200 baud - 1200 baud modems are quite sensitive to noise. If there is a noise problem, try using a 300 baud modem.
- Acoustical coupling - The carbon microphone supplied with the telephone may not be good enough for computer communications. Try switching the microphone with another telephone. Also, electret condenser replacement microphones are available which are better than carbon microphones for use with a modem.

APPENDIX C  
REPORT FORMATS

EXECUTIVE SUMMARY OF ANALYSIS PAGE xx

PROJECT TITLE: (project title) (machine date)  
PROJECT OBJECTIVE: (objective of the analysis)  
DISCOUNT RATE: ds rt% PERIOD OF ANALYSIS: pr YEARS ECONOMIC LIFE: ec YEARS  
START YEAR: (start year) BASE YEAR: (base year)

ASSUMPTIONS OF THE ANALYSIS:

(discussion of assumptions text block)

ALTERNATIVES CONSIDERED FOR THIS ANALYSIS:

(discussion of alternatives text block)

ALTERNATIVES COMPARED:

<u>ALTERNATIVE</u>	<u>NAME</u>	<u>NPV</u>	<u>EUAC</u>	( <u>SIR</u> )	( <u>DPP</u> )
(STATUS QUO)	(name)	(xxxxxxxxxx)	(xxxxxxxxxx)	(---)	(----)
1	(name)	xxxxxxxxxx	xxxxxxxxxx	xxxxxx	xxxx YEARS
2	(name)	xxxxxxxxxx	xxxxxxxxxx	xxxxxx	xxxx YEARS
3	(name)	xxxxxxxxxx	xxxxxxxxxx	xxxxxx	xxxx YEARS
4	(name)	xxxxxxxxxx	xxxxxxxxxx	xxxxxx	xxxx YEARS

RESULTS AND RECOMMENDATIONS:

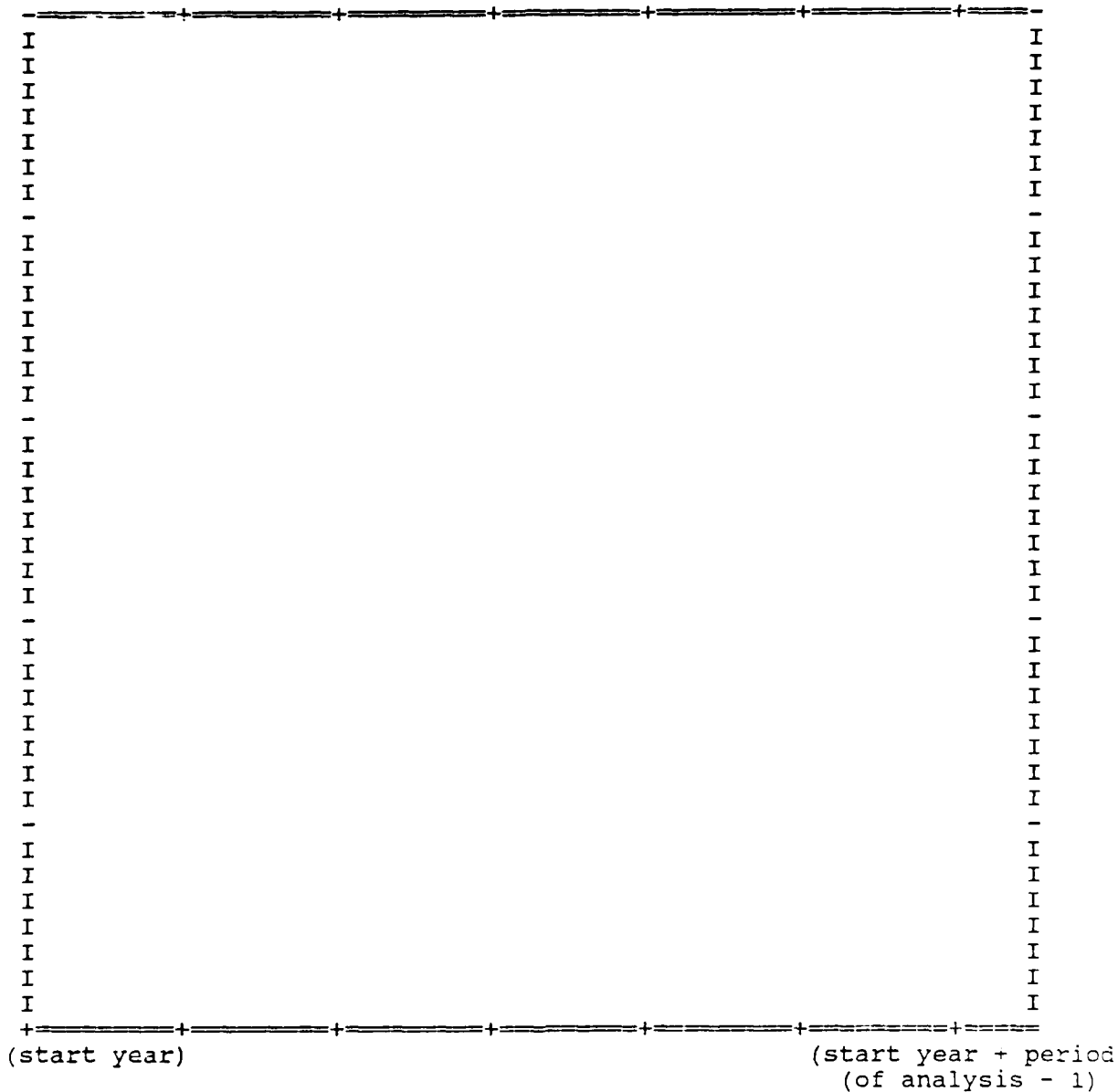
(results and recommendations text block)

ACTION OFFICER: (name, title, and phone number of the action officer)  
ORGANIZATION: (organization title)

# ECONOMIC ANALYSIS COMPARISON PLOT

## CUMULATIVE NET PRESENT VALUE

M  
I  
L  
L  
I  
O  
N  
S  
  
O  
F  
  
D  
O  
L  
L  
A  
R  
S



LEGEND	DESCRIPTION
(alt #)	(alternative name)
M	MERGING DATA

# L I F E C Y C L E C O S T R E P O R T S

PAGE xx

ALTERNATIVE XX: (alternative description)  
(alternative description)

YEAR	(title for) (expense item) (01)	(title for) (expense item) (02)	(title for) (expense item) (03)	TOTAL ANNUAL OUTLAYS	PRESENT VALUE
(start year)					
(start year +1)					

(start year + period of analysis - 1)

\*\*\*\*\*  
%NPV

YEAR	CUMULATIVE PRESENT VALUE	PRESENT VALUE RESIDUAL	CUMULATIVE NET PRESENT VALUE
(start year)			
(start year +1)			

(start year + period of analysis - 1)

EQUIVALENT UNIFORM ANNUAL COST = euac ( % DISCOUNT RATE, YEARS  
EXPENSE ITEM(S) (1 - 10) USED INFLATION INDEX NUMBER (xx) - title

If Primary Analysis,

L I F E C Y C L E C O S T R E P O R T S

PAGE xx

PRIMARY ECONOMIC ANALYSIS

PRESENT ALTERNATIVE: (status quo alternative name)  
PROPOSED ALTERNATIVE: (proposed alternative name)  
ECONOMIC LIFE: PRESENT (status quo economic life) YEARS  
ECONOMIC LIFE: PROPOSED (proposed alternative economic life) YEARS

PROJECT YEAR(S)	RECURRING ANNUAL OPERATIONS COSTS		DIFFERENTIAL COSTS	PRESENT VALUE OF DIFFERENTIAL COSTS
	PRESENT ALTERNATIVE	PROPOSED ALTERNATIVE		
(start year)				
(start year +1)				

(start year + period of analysis - 1)

TOTALS

TOTAL PRESENT VALUE OF INVESTMENT  
PLUS: PRESENT VALUE OF EXISTING ASSETS TO BE USED  
LESS: PRESENT VALUE OF EXISTING ASSETS REPLACED  
LESS: PRESENT VALUE OF TERMINAL VALUE OF ALTERNATIVE  
TOTAL PRESENT VALUE OF NET INVESTMENT  
PRESENT VALUE OF DIFFERENTIAL COSTS  
PLUS: PRESENT VALUE OF COST OF REFURBISHMENT OR  
MODIFICATION ELIMINATED  
LESS: STATUS QUO SALVAGE VALUE  
TOTAL PRESENT VALUE OF SAVINGS  
SAVINGS/INVESTMENT RATIO  
DISCOUNTED PAYBACK PERIOD YEARS

L I F E   C Y C L E   C O S T   R E P O R T S

PAGE xx

SOURCE AND DERIVATION OF COSTS AND BENEFITS:

(source/derivation of costs and benefits text block)

# S E N S I T I V I T Y   A N A L Y S I S

PAGE xx

(project title)

NO. .... (sensitivity analysis number)  
 TITLE .... (title of sensitivity analysis)  
 ALLOWABLE CHANGE ..... (upper limit of change)  
 TIME PERIOD ..... (period of analysis)

FOR SELECTED ALTERNATIVE .. (first alternative included in analysis)  
 COST ITEMS TO CHANGE ... (expense item to change for alternative)

FOR SELECTED ALTERNATIVE .. (next alternative included in analysis)  
 COST ITEMS TO CHANGE ... (expense item to change for alternative)

FOR SELECTED ALTERNATIVE .. (next alternative included in analysis)  
 COST ITEMS TO CHANGE ... (expense item to change for alternative)

OBJECTIVE ..... RANK ALTERNATIVE   xx FIRST

I N I T I A L   R A N K I N G		F I N A L   R A N K I N G	
-----		-----	
ALTERNATIVE	NET DISCOUNTED P.V.	ALTERNATIVE	NET DISCOUNTED P.V.

REQUIRED PERCENTAGE IS                      %

\*\*\*\*\*

\*\* END OF RUN \*\*



APPENDIX D  
SAMPLE OUTPUT

CASE STUDY  
FORT ALICE

\*  
\* VERSION 1.0  
\*

\*  
PROJECT TITLE IS 'OFFICERS QUARTERS'  
ACTION OFFICER IS 'JAMES R. SPINDLE'  
ORGANIZATION IS 'DEH, FORT ALICE'  
OBJECTIVE IS 'PROVIDE 95000 SF OF UNACCOMPANIED OFFICER HOUSNG'  
\*

\*  
BEGIN ASSUMPTIONS

Construction is assumed to take 2 years. Half of the units will be available in 1988 and beneficial occupancy for the remaining units will occur in 1989.

Renovation is expected to take only one year.

END ASSUMPTIONS  
\*

\*  
BEGIN DISCUSSION OF ALTERNATIVES

New Construction- this alternative will provide the required 95,000 sf of unaccompanied officer housing.

Modification- an existing, unoccupied administrative facility will be renovated to provide the necessary 95,000 sf of housing for unaccompanied officers.

Status Quo Operations- this is a new mission requirement. There are no facilities available to accommodate this increase in troop strength.

Pay BAQ/VHA- this alternative was eliminated from further evaluation due to the absence of housing available in the vicinity of Fort Alice. The closest town is 87 miles away. Winter conditions preclude commuting from this distance for 4 months of the year. Most importantly, mission requirements, due to the early deployment requirement preclude this unit from being billeted off-post.

Lease- No existing facilities are available for lease within a 100 mile radius of the installation. The mission requirements of this unit (as discussed above) prevent this alternative from being feasible.

END DISCUSSION OF ALTERNATIVES

\*

\*

BEGIN DATA

PERIOD OF ANALYSIS IS 27 YEARS

START YEAR IS 1987

BASE YEAR IS 1987

DISCOUNT RATE IS 10.00

GLOBAL DISCOUNTING CONVENTION IS 2

SECONDARY ANALYSIS

COST STORED IN 'ACTUAL' DOLLARS

END DATA

\*

\*

BEGIN ALTERNATIVE 1

ALTERNATIVE NAME IS 'NEW CONSTRUCTION'

ALTERNATIVE DESCRIPTION IS &

'PERMANENT CONSTRUCTION OF UNACCOMPANIED' &

'OFFICER QUARTER (95000 SF)'

ECONOMIC LIFE IS 27 YEARS

EXPENSE ITEM 1 IS 'INITIAL:CONSTRUCTION:COST' &

2\*3250000.00 25\*0.00

EXPENSE ITEM 2 IS 'MAINTENANCE:AND:REPAIR' &

1\*0.00 1\*26471.00 25\*52942.00

EXPENSE ITEM 3 IS 'UTILITIES: : ' &

1\*0.00 1\*25175.00 25\*50350.00

EXPENSE ITEM 4 IS 'NEW ROOF:IN YR 15:HVAC YR 20' &

14\*0.00 1\*855000.00 4\*0.00 1\*1170000.00 7\*0.00

INFLATION FACTORS ARE &

4\*0

DISCOUNT FACTORS ARE &

4\*2

SALVAGE VALUE IS 2600000.00

RESIDUAL INFLATION INDEX IS 0

RESIDUAL DISCOUNTING CONVENTION IS 3

END ALTERNATIVE 1

\*

\*

BEGIN ALTERNATIVE 2

ALTERNATIVE NAME IS 'MODIFICATION'

ALTERNATIVE DESCRIPTION IS &

'MODIFY AN EXISTING FACILITY TO PROVIDE 95000 SF' &

'OF UNACCOMPANIED OFFICERS QUARTERS'

ECONOMIC LIFE IS 27 YEARS

EXPENSE ITEM 1 IS 'RENOVATION:UPGRADE: ' &

1\*5890000.00 26\*0.00

EXPENSE ITEM 2 IS 'UPGRADE IN:YEAR 15 ROOF:YEAR 20 HVAC' &

14\*0.00 1\*855000.00 4\*0.00 1\*1060200.00 7\*0.00

EXPENSE ITEM 3 IS 'MAINTENANCE:AND:REPAIR' &

1\*0.00 26\*123500.00

EXPENSE ITEM 4 IS 'UTILITIES: : ' &

1\*0.00 26\*82650.00  
EXPENSE ITEM 5 IS 'DEMOLITION:COST: ' &  
26\*0.00 1\*252700.00  
INFLATION FACTORS ARE &  
5\*0  
DISCOUNT FACTORS ARE &  
5\*2  
END ALTERNATIVE 2  
\*  
\*  
BEGIN SOURCE/DERIVATION  
NEW CONSTRUCTION

Initial investment was determined to be \$74.00/sf per 415-17.

Maintenance and repair estimates were obtained from FY86 Tech Data Reports. These costs were inflated to FY87 by OSD/OMB inflation indices as follows:  $\$.54/\text{sf} \times 95,000 \text{ sf} = \$51,300$

$$\$51,300 \times 1.032 \text{ (Inflation)} = \$52,942.$$

Utility costs are based on DEH historical records @ \$.53/sf.

Roof replacement and HVAC replacements were included in years 15 and 20 respectively. Roof estimates for both alternatives were developed as follows:  $\$.90/\text{sf} \times 95,000 \text{ sf} = \$855,000$ .

HVAC was assumed to be 18% of initial construction/renovation costs.

A residual value for the facility was estimated to be 40% of initial construction costs.

#### MODIFICATION

Renovation costs were estimated to be \$62.00 per sf.

Maintenance and repair estimates were obtained from historical records as follows:  $\$1.30/\text{sf} \times 95,000 \text{ sf} = \$123,500$ .

Utilities estimates were also obtained from historical records as follows:  $\$.87/\text{sf} \times 95,000 \text{ sf} = \$82,650$ .

A one-time upgrade in year 20 is included to reflect overhaul of HVAC and a new roof.

Demolition costs for the facility were estimated to be \$2.66/sf.

END SOURCE/DERIVATION

\*  
\*

BEGIN GRAPHICS 1  
PLOT ALTERNATIVES 1 2  
END GRAPHICS 1

\*  
\*

#### BEGIN RESULTS

The new construction alternative is the least cost alternative and recommended to provide the required 95,000 sf. In addition to the quantitative advantages, the new construction alternative offers a higher ranking of non-monetary considerations as follows:

	Modification	New Construction
Morale	Fair	High
Discipline	Fair	Very Good
Re-enlistment	Fair	High
Readiness	Fair	Excellent
Traffic Accidents (lost time)	Fair	Excellent
Community Relations	Fair	Excellent

END RESULTS

\*  
\*

STOP RUN

FILENAME: FTALICE  
02 NOV 1987

E X E C U T I V E   S U M M A R Y   R E P O R T      P A G E   0 0 1

PROJECT TITLE : OFFICERS QUARTERS  
PROJECT OBJECTIVE : PROVIDE 95000 SF OF UNACCOMPANIED OFFICER HOUSNG  
DISCOUNT RATE : 10.00%  
PERIOD OF ANALYSIS: 27 YEARS  
START YEAR : 1987  
BASE YEAR : 1987

ASSUMPTIONS OF THE ANALYSIS:

Construction is assumed to take 2 years. Half of the units will be available in 1988 and beneficial occupancy for the remaining units will occur in 1989.

Renovation is expected to take only one year.

ALTERNATIVES CONSIDERED FOR THIS ANALYSIS:

New Construction- this alternative will provide the required 95,000 sf of unaccompanied officer housing.

Modification- an existing, unoccupied administrative facility will be renovated to provide the necessary 95,000 sf of housing for unaccompanied officers.

Status Quo Operations- this is a new mission requirement. There are no facilities available to accommodate this increase in troop strength.

Pay BAQ/VHA- this alternative was eliminated from further evaluation due to the absence of housing available in the vicinity of Fort Alice. The closest town is 87 miles away. Winter conditions preclude commuting from this distance for 4 months of the year. Most importantly, mission requirements, due to the early deployment requirement preclude this unit from being billeted off-post.

Lease- No existing facilities are available for lease within a 100 mile radius of the installation. The mission requirements of this unit (as discussed above) prevent this alternative from being feasible.

ALTERNATIVES COMPARED:

ALTERNATIVE NAME	NPV	EUAC
1 NEW CONSTRUCTION	\$6,972,002	\$754,772
2 MODIFICATION	\$7,816,707	\$846,218

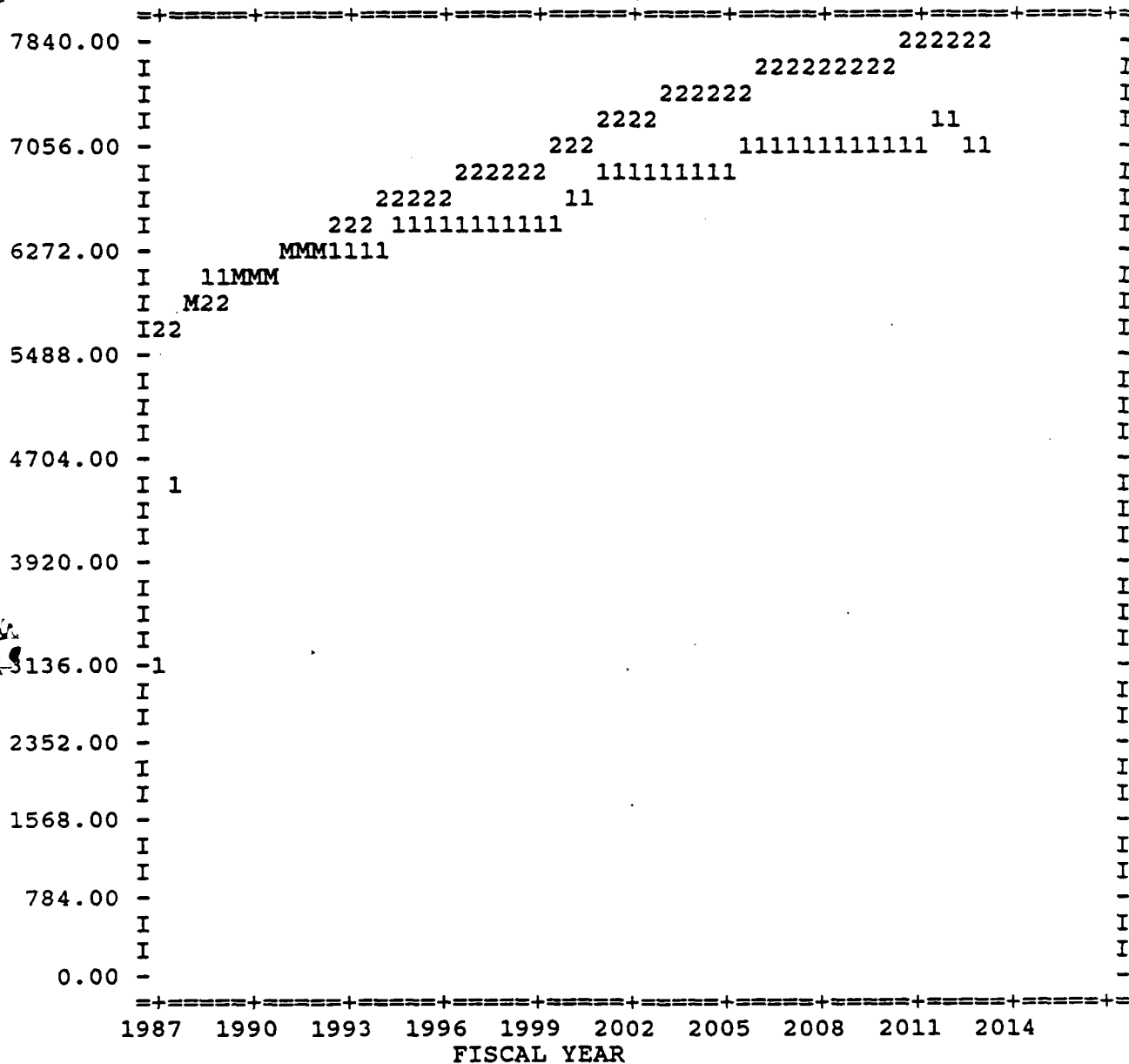
RESULTS AND RECOMMENDATIONS:

The new construction alternative is the least cost alternative and recommended to provide the required 95,000 sf. In addition to the quantitative advantages, the new construction alternative offers a higher ranking of non-monetary considerations as follows:

	Modification	New Construction
Morale	Fair	High
Discipline	Fair	Very Good
Re-enlistment	Fair	High
Readiness	Fair	Excellent
Traffic Accidents (lost time)	Fair	Excellent
Community Relations	Fair	Excellent

ACTION OFFICER: JAMES R. SPINDLE  
ORGANIZATION : DEH, FORT ALICE

ECONOMIC ANALYSIS GRAPH 1  
CUMULATIVE NET PRESENT VALUE (\$ in thousands)



LEGEND	DESCRIPTION
1	NEW CONSTRUCTION
2	MODIFICATION
M	MERGING DATA

L I F E C Y C L E C O S T R E P O R T

PAGE 001

PROJECT/PROGRAM COSTS

ALTERNATIVE 1: NEW CONSTRUCTION

YEAR	INITIAL CONSTRUCTION COST (01)	MAINTENANCE AND REPAIR (02)	UTILITIES (03)	NEW ROOF IN YR 15 HVAC YR 20 (04)	TOTAL ANNUAL OUTLAYS
1987	\$3,250,000	\$0	\$0	\$0	\$3,250,000
1988	\$3,250,000	\$26,471	\$25,175	\$0	\$3,301,646
1989	\$0	\$52,942	\$50,350	\$0	\$103,292
1990	\$0	\$52,942	\$50,350	\$0	\$103,292
1991	\$0	\$52,942	\$50,350	\$0	\$103,292
1992	\$0	\$52,942	\$50,350	\$0	\$103,292
1993	\$0	\$52,942	\$50,350	\$0	\$103,292
1994	\$0	\$52,942	\$50,350	\$0	\$103,292
1995	\$0	\$52,942	\$50,350	\$0	\$103,292
1996	\$0	\$52,942	\$50,350	\$0	\$103,292
1997	\$0	\$52,942	\$50,350	\$0	\$103,292
1998	\$0	\$52,942	\$50,350	\$0	\$103,292
1999	\$0	\$52,942	\$50,350	\$0	\$103,292
2000	\$0	\$52,942	\$50,350	\$0	\$103,292
2001	\$0	\$52,942	\$50,350	\$855,000	\$958,292
2002	\$0	\$52,942	\$50,350	\$0	\$103,292
2003	\$0	\$52,942	\$50,350	\$0	\$103,292
2004	\$0	\$52,942	\$50,350	\$0	\$103,292
2005	\$0	\$52,942	\$50,350	\$0	\$103,292
2006	\$0	\$52,942	\$50,350	\$1,170,000	\$1,273,292
2007	\$0	\$52,942	\$50,350	\$0	\$103,292
2008	\$0	\$52,942	\$50,350	\$0	\$103,292
2009	\$0	\$52,942	\$50,350	\$0	\$103,292
2010	\$0	\$52,942	\$50,350	\$0	\$103,292
2011	\$0	\$52,942	\$50,350	\$0	\$103,292
2012	\$0	\$52,942	\$50,350	\$0	\$103,292
2013	\$0	\$52,942	\$50,350	\$0	\$103,292
%NPV	84.85	6.30	5.99	5.70	



## L I F E C Y C L E C O S T R E P O R T

PAGE 002

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 1: NEW CONSTRUCTION

YEAR	PRESENT VALUE	CUMULATIVE PRESENT VALUE	PRESENT VALUE RESIDUAL	CUMULATIVE NET PRESENT VALUE
1987	\$3,098,753	\$3,098,753	\$0	\$3,098,753
1988	\$2,861,815	\$5,960,568	\$0	\$5,960,568
1989	\$81,393	\$6,041,961	\$0	\$6,041,961
1990	\$73,993	\$6,115,954	\$0	\$6,115,954
1991	\$67,266	\$6,183,220	\$0	\$6,183,220
1992	\$61,151	\$6,244,371	\$0	\$6,244,371
1993	\$55,593	\$6,299,964	\$0	\$6,299,964
1994	\$50,538	\$6,350,502	\$0	\$6,350,502
1995	\$45,944	\$6,396,446	\$0	\$6,396,446
1996	\$41,768	\$6,438,214	\$0	\$6,438,214
1997	\$37,971	\$6,476,185	\$0	\$6,476,185
1998	\$34,518	\$6,510,703	\$0	\$6,510,703
1999	\$31,380	\$6,542,083	\$0	\$6,542,083
2000	\$28,528	\$6,570,611	\$0	\$6,570,611
2001	\$240,604	\$6,811,215	\$0	\$6,811,215
2002	\$23,576	\$6,834,791	\$0	\$6,834,791
2003	\$21,434	\$6,856,225	\$0	\$6,856,225
2004	\$19,485	\$6,875,710	\$0	\$6,875,710
2005	\$17,713	\$6,893,423	\$0	\$6,893,423
2006	\$198,506	\$7,091,929	\$0	\$7,091,929
2007	\$14,639	\$7,106,568	\$0	\$7,106,568
2008	\$13,308	\$7,119,876	\$0	\$7,119,876
2009	\$12,098	\$7,131,974	\$0	\$7,131,974
2010	\$10,998	\$7,142,972	\$0	\$7,142,972
2011	\$9,999	\$7,152,971	\$0	\$7,152,971
2012	\$9,090	\$7,162,061	\$0	\$7,162,061
2013	\$8,263	\$7,170,324	\$198,322	\$6,972,002
			-2.84	
%NPV				

EQUIVALENT UNIFORM ANNUAL COST = \$754,772 (10.00% DISCOUNT RATE, 27 YEARS)

## L I F E C Y C L E C O S T R E P O R T

PAGE 003

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 2: MODIFICATION

YEAR	RENOVATION UPGRADE (01)	UPGRADE IN YEAR 15 ROOF YEAR 20 HVAC (02)	MAINTENANCE AND REPAIR (03)	UTILITIES (04)	DEMOLITION COST (05)
1987	\$5,890,000	\$0	\$0	\$0	\$0
1988	\$0	\$0	\$123,500	\$82,650	\$0
1989	\$0	\$0	\$123,500	\$82,650	\$0
1990	\$0	\$0	\$123,500	\$82,650	\$0
1991	\$0	\$0	\$123,500	\$82,650	\$0
1992	\$0	\$0	\$123,500	\$82,650	\$0
1993	\$0	\$0	\$123,500	\$82,650	\$0
1994	\$0	\$0	\$123,500	\$82,650	\$0
1995	\$0	\$0	\$123,500	\$82,650	\$0
1996	\$0	\$0	\$123,500	\$82,650	\$0
1997	\$0	\$0	\$123,500	\$82,650	\$0
1998	\$0	\$0	\$123,500	\$82,650	\$0
1999	\$0	\$0	\$123,500	\$82,650	\$0
2000	\$0	\$0	\$123,500	\$82,650	\$0
2001	\$0	\$855,000	\$123,500	\$82,650	\$0
2002	\$0	\$0	\$123,500	\$82,650	\$0
2003	\$0	\$0	\$123,500	\$82,650	\$0
2004	\$0	\$0	\$123,500	\$82,650	\$0
2005	\$0	\$0	\$123,500	\$82,650	\$0
2006	\$0	\$1,060,200	\$123,500	\$82,650	\$0
2007	\$0	\$0	\$123,500	\$82,650	\$0
2008	\$0	\$0	\$123,500	\$82,650	\$0
2009	\$0	\$0	\$123,500	\$82,650	\$0
2010	\$0	\$0	\$123,500	\$82,650	\$0
2011	\$0	\$0	\$123,500	\$82,650	\$0
2012	\$0	\$0	\$123,500	\$82,650	\$0
2013	\$0	\$0	\$123,500	\$82,650	\$252,700
%NPV	71.84	4.86	13.80	9.24	0.2

## L I F E C Y C L E C O S T R E P O R T

PAGE 004

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 2: MODIFICATION

YEAR	TOTAL ANNUAL OUTLAYS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1987	\$5,890,000	\$5,615,895	\$5,615,895
1988	\$206,150	\$178,688	\$5,794,583
1989	\$206,150	\$162,443	\$5,957,026
1990	\$206,150	\$147,675	\$6,104,701
1991	\$206,150	\$134,251	\$6,238,952
1992	\$206,150	\$122,046	\$6,360,998
1993	\$206,150	\$110,951	\$6,471,949
1994	\$206,150	\$100,865	\$6,572,814
1995	\$206,150	\$91,694	\$6,664,508
1996	\$206,150	\$83,359	\$6,747,867
1997	\$206,150	\$75,781	\$6,823,648
1998	\$206,150	\$68,892	\$6,892,540
1999	\$206,150	\$62,629	\$6,955,169
2000	\$206,150	\$56,936	\$7,012,105
2001	\$1,061,150	\$266,429	\$7,278,534
2002	\$206,150	\$47,054	\$7,325,588
2003	\$206,150	\$42,776	\$7,368,364
2004	\$206,150	\$38,888	\$7,407,252
2005	\$206,150	\$35,353	\$7,442,605
2006	\$1,266,350	\$197,422	\$7,640,027
2007	\$206,150	\$29,217	\$7,669,244
2008	\$206,150	\$26,561	\$7,695,805
2009	\$206,150	\$24,146	\$7,719,951
2010	\$206,150	\$21,951	\$7,741,902
2011	\$206,150	\$19,956	\$7,761,858
2012	\$206,150	\$18,141	\$7,779,999
2013	\$458,850	\$36,708	\$7,816,707

EQUIVALENT UNIFORM ANNUAL COST = \$846,218 (10.00% DISCOUNT RATE, 27 YEARS)

SOURCE AND DERIVATION OF COSTS AND BENEFITS:  
NEW CONSTRUCTION

Initial investment was determined to be \$74.00/sf per 415-17. Maintenance and repair estimates were obtained from FY86 Tech Data Reports. These costs were inflated to FY87 by OSD/OMB inflation indices as follows:

$$$.54/\text{sf} \times 95,000 \text{ sf} = \$51,300$$

$$\$51,300 \times 1.032 \text{ (Inflation)} = \$52,942.$$

Utility costs are based on DEH historical records @ \$.53/sf.

Roof replacement and HVAC replacements were included in years 15 and 20 respectively. Roof estimates for both alternatives were developed as follows:

$$\$9.00/\text{sf} \times 95,000 \text{ sf} = \$855,000.$$

HVAC was assumed to be 18% of initial construction/renovation costs. A residual value for the facility was estimated to be 40% of initial construction costs.

## MODIFICATION

Renovation costs were estimated to be \$62.00 per sf. Maintenance and repair estimates were obtained from historical records as follows:

$$\$1.30/\text{sf} \times 95,000 \text{ sf} = \$123,500.$$

Utilities estimates were also obtained from historical records as follows:

$$$.87/\text{sf} \times 95,000 \text{ sf} = \$82,650.$$

A one-time upgrade in year 20 is included to reflect overhaul of HVAC and a new roof.

Demolition costs for the facility were estimated to be \$2.66/sf.

INPUT LISTING  
LINES 000001-000050

0001: \*  
0002: \* VERSION 1.0  
0003: \*  
0004: \*  
0005: PROJECT TITLE IS 'OFFICERS QUARTERS'  
0006: ACTION OFFICER IS 'JAMES R. SPINDLE'  
0007: ORGANIZATION IS 'DEH, FORT ALICE'  
0008: OBJECTIVE IS 'PROVIDE 95000 SF OF UNACCOMPANIED OFFICER HOUSNG'  
0009: \*  
0010: \*  
0011: BEGIN ASSUMPTIONS  
0012: Construction is assumed to take 2 years. Half of the units will be  
0013: available in 1988 and beneficial occupancy for the remaining units  
0014: will occur in 1989.  
0015: \*  
0016: Renovation is expected to take only one year.  
0017: \*  
0018: \*  
0019: END ASSUMPTIONS  
0020: \*  
0021: \*  
0022: BEGIN DISCUSSION OF ALTERNATIVES  
0023: New Construction- this alternative will provide the required 95,000 sf  
0024: of unaccompanied officer housing.  
0025: \*  
0026: Modification- an existing, unoccupied administrative facility will be  
0027: renovated to provide the necessary 95,000 sf of housing for unaccompanied  
0028: officers.  
0029: \*  
0030: Status Quo Operations- this is a new mission requirement. There are  
0031: no facilities available to accomodate this increase in troop strength.  
0032: \*  
0033: Pay BAQ/VHA- this alternative was eliminated from further evaluation due  
0034: the absence of housing available in the vicinity of Fort Alice. The closest  
0035: town is 87 miles away. Winter conditions preclude commuting from this  
0036: distance for 4 months of the year. Most importantly, mission  
0037: requirements, due to the early deployment requirement preclude this unit  
0038: from being billeted off-post.  
0039: \*  
0040: Lease- No existing facilities are available for lease within a 100 mile  
0041: radius of the installation. The mission requirements of this unit  
0042: (as discussed above) prevent this alternative from being feasible.  
0043: \*  
0044: \*  
0045: END DISCUSSION OF ALTERNATIVES  
0046: \*  
0047: \*  
0048: BEGIN DATA  
0049: PERIOD OF ANALYSIS IS 27 YEARS  
0050: START YEAR IS 1987

INPUT LISTING  
LINES 000051-000100

0051: BASE YEAR IS 1987  
0052: DISCOUNT RATE IS 10.00  
0053: GLOBAL DISCOUNTING CONVENTION IS 2  
0054: SECONDARY ANALYSIS  
0055: COST STORED IN 'ACTUAL' DOLLARS  
0056: END DATA  
0057: \*  
0058: \*  
0059: BEGIN ALTERNATIVE 1  
0060: ALTERNATIVE NAME IS 'NEW CONSTRUCTION'  
0061: ALTERNATIVE DESCRIPTION IS &  
0062: 'PERMANENT CONSTRUCTION OF UNACCOMPANIED' &  
0063: 'OFFICER QUARTER (95000 SF)'  
0064: ECONOMIC LIFE IS 27 YEARS  
0065: EXPENSE ITEM 1 IS 'INITIAL:CONSTRUCTION:COST' &  
0066: 2\*3250000.00 25\*0.00  
0067: EXPENSE ITEM 2 IS 'MAINTENANCE:AND:REPAIR' &  
0068: 1\*0.00 1\*26471.00 25\*52942.00  
0069: EXPENSE ITEM 3 IS 'UTILITIES: : ' &  
0070: 1\*0.00 1\*25175.00 25\*50350.00  
0071: EXPENSE ITEM 4 IS 'NEW ROOF:IN YR 15:HVAC YR 20' &  
0072: 14\*0.00 1\*855000.00 4\*0.00 1\*1170000.00 7\*0.00  
0073: INFLATION FACTORS ARE &  
0074: 4\*0  
0075: DISCOUNT FACTORS ARE &  
0076: 4\*2  
0077: SALVAGE VALUE IS 2600000.00  
0078: RESIDUAL INFLATION INDEX IS 0  
0079: RESIDUAL DISCOUNTING CONVENTION IS 3  
0080: END ALTERNATIVE 1  
0081: \*  
0082: \*  
0083: BEGIN ALTERNATIVE 2  
0084: ALTERNATIVE NAME IS 'MODIFICATION'  
0085: ALTERNATIVE DESCRIPTION IS &  
0086: 'MODIFY AN EXISTING FACILITY TO PROVIDE 95000 SF' &  
0087: 'OF UNACCOMPANIED OFFICERS QUARTERS'  
0088: ECONOMIC LIFE IS 27 YEARS  
0089: EXPENSE ITEM 1 IS 'RENOVATION:UPGRADE: ' &  
0090: 1\*5890000.00 26\*0.00  
0091: EXPENSE ITEM 2 IS 'UPGRADE IN:YEAR 15 ROOF:YEAR 20 HVAC' &  
0092: 14\*0.00 1\*855000.00 4\*0.00 1\*1060200.00 7\*0.00  
0093: EXPENSE ITEM 3 IS 'MAINTENANCE:AND:REPAIR' &  
0094: 1\*0.00 26\*123500.00  
0095: EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
0096: 1\*0.00 26\*82650.00  
0097: EXPENSE ITEM 5 IS 'DEMOLITION:COST: ' &  
0098: 26\*0.00 1\*252700.00  
0099: INFLATION FACTORS ARE &  
0100: 5\*0

I N P U T   L I S T I N G  
L I N E S   0 0 0 1 0 1 - 0 0 0 1 5 0

0101: DISCOUNT FACTORS ARE &  
0102: 5\*2  
0103: END ALTERNATIVE 2  
0104: \*  
0105: \*  
0106: BEGIN SOURCE/DERIVATION  
0107: NEW CONSTRUCTION  
0108:  
0109:     Initial investment was determined to be \$74.00/sf per 415-17.  
0110:  
0111:     Maintenance and repair estimates were obtained from FY86 Tech Data  
0112:  
0113:     Reports.   These costs were inflated to FY87 by OSD/OMB inflation indices  
0114:  
0115:     as follows:   \$.54/sf x 95,000 sf = \$51,300  
0116:  
0117:                 \$51,300 x 1.032 (Inflation) = \$52,942.  
0118:  
0119:     Utility costs are based on DEH historical records @ \$.53/sf.  
0120:  
0121:     Roof replacement and HVAC replacements were included in years 15 and 2  
0122:  
0123:     respectively.   Roof estimates for both alternatives were developed as  
0124:  
0125:     follows:   \$9.00/sf x 95,000 sf = \$855,000.  
0126:  
0127:     HVAC was assumed to be 18% of initial construction/renovation costs.  
0128:  
0129:     A residual value for the facility was estimated to be 40% of initial  
0130:  
0131:     construction costs.  
0132:  
0133:  
0134:  
0135: MODIFICATION  
0136:  
0137:     Renovation costs were estimated to be \$62.00 per sf.  
0138:  
0139:     Maintenance and repair estimates were obtained from historical records  
0140:  
0141:     as follows:   \$1.30/sf x 95,000 sf = \$123,500.  
0142:  
0143:     Utilities estimates were also obtained from historical records as  
0144:  
0145:     follows:   \$.87/sf x 95,000 sf = \$82,650.  
0146:  
0147:     A one-time upgrade in year 20 is included to reflect overhaul of HVAC  
0148:  
0149:     and a new roof.  
0150:

# INPUT LISTING

LINES 000151-000200

0151: Demolition costs for the facility were estimated to be \$2.66/sf.

0152:

0153:

0154:

0155:

0156:

0157: END SOURCE/DERIVATION

0158: \*

0159: \*

0160: BEGIN GRAPHICS 1

0161: PLOT ALTERNATIVES 1 2

0162: END GRAPHICS 1

0163: \*

0164: \*

0165: BEGIN RESULTS

0166: The new construction alternative is the least cost alternative and

0167: recommended to provide the required 95,000 sf. In addition to the

0168: quantitative advantages, the new construction alternative offers a

0169: higher ranking of non-monetary considerations as follows:

0170:

0171:	Modification	New Construction
-------	--------------	------------------

0172: Morale	Fair	High
--------------	------	------

0173: Discipline	Fair	Very Good
------------------	------	-----------

0174: Re-enlistment	Fair	High
---------------------	------	------

0175: Readiness	Fair	Excellent
-----------------	------	-----------

0176: Traffic Accidents	Fair	Excellent
-------------------------	------	-----------

0177: (lost time)		
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0178: Community Relations	Fair	Excellent
---------------------------	------	-----------

0179:

0180: END RESULTS

0181: \*

0182: \*

0183: STOP RUN

\*\* END OF RUN \*\*



CASE STUDY  
FORT PANAMA

\*  
\* VERSION 1.0  
\*

\*  
PROJECT TITLE IS 'PANAMA HOUSING'  
ACTION OFFICER IS 'BOB N'  
ORGANIZATION IS 'USA-CERL'  
OBJECTIVE IS 'DETERMINE LEAST COST METHOD OF HOUSING 500 FAM'  
\*

\*  
BEGIN ASSUMPTIONS

For the conventional MCA construction alternative (#4), it is assumed that there will be no payment made by the Republic of Panama upon the transfer of the property in 1999.

Complete beneficial occupancy for all alternatives will occur in 1987.

Delivery schedules are assumed to be 60/40% for MCA units and 50/50% for trailer/relocatable units.

Lease and rental Guarantee units will be located on privately owned land.

The discount rate is 8.60%, based on 10 year treasury securities.

END ASSUMPTIONS

\*  
\*

BEGIN DISCUSSION OF ALTERNATIVES

There are five alternatives analyzed to meet the requirement of housing 500 families. These are:

1. Lease housing through the Republic of Panama - the Army would enter into an agreement to lease 500 units from the ROP.
2. Build to lease - 500 housing units would be constructed by a private developer and leased to the Army.
3. Rental guarantee - the Army would guarantee 97% occupancy of 500 rental housing units. Occupants receive BAQ/VHA and pay for rent & utilities.
4. MCA Construction - 500 housing units would be built on-post through conventional MCA construction.
5. Purchase trailers/relocatable units - the Army would provide housing for 500 families on-post in trailers/relocatable housing units.

END DISCUSSION OF ALTERNATIVES

\*  
\*

BEGIN DATA  
 PERIOD OF ANALYSIS IS 15 YEARS  
 START YEAR IS 1985  
 BASE YEAR IS 1985  
 DISCOUNT RATE IS 8.60  
 GLOBAL DISCOUNTING CONVENTION IS 2  
 INFLATION INDEX 1 IS 'MOBILE PROJECTION' &  
 15\*0.07  
 INFLATION INDEX 2 IS 'OSD GENERAL' &  
 15\*0.05  
 INFLATION INDEX 3 IS 'NO INFLATION' &  
 15\*0.00  
 SECONDARY ANALYSIS  
 COST STORED IN 'THOUSANDS OF' DOLLARS  
 END DATA

\*  
 \*

BEGIN ALTERNATIVE 1  
 ALTERNATIVE NAME IS 'ROP LEASE'  
 ALTERNATIVE DESCRIPTION IS &  
 'LEASE HOUSING THROUGH THE REPUBLIC OF PANAMA'  
 ECONOMIC LIFE IS 15 YEARS  
 EXPENSE ITEM 1 IS 'LEASE:RENT: ' &  
 2\*0.00 13\*3600.00  
 EXPENSE ITEM 2 IS 'SERVICES: : ' &  
 2\*0.00 13\*306.00  
 EXPENSE ITEM 3 IS 'UTILITIES: : ' &  
 2\*0.00 13\*2058.00  
 EXPENSE ITEM 4 IS 'MAINTENANCE: AND: REPAIR' &  
 2\*0.00 13\*432.00  
 EXPENSE ITEM 5 IS 'ALLOWANCES: : ' &  
 2\*5800.00 13\*11.50  
 INFLATION FACTORS ARE &  
 1\*1 4\*2  
 DISCOUNT FACTORS ARE &  
 5\*2  
 END ALTERNATIVE 1

\*  
 \*

BEGIN ALTERNATIVE 2  
 ALTERNATIVE NAME IS 'BUILD TO LEASE'  
 ALTERNATIVE DESCRIPTION IS &  
 'BUILD HOUSING TO LEASE'  
 ECONOMIC LIFE IS 15 YEARS  
 EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
 2\*5800.00 13\*0.00  
 EXPENSE ITEM 2 IS 'LEASE: RENT: ' &  
 2\*0.00 13\*4020.00  
 EXPENSE ITEM 3 IS 'SERVICES: : ' &  
 2\*0.00 13\*48.00  
 EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
 2\*0.00 13\*1770.00

EXPENSE ITEM 5 IS 'MAINTENANCE: : ' &  
2\*0.00 13\*564.00  
INFLATION FACTORS ARE &  
1\*2 1\*1 3\*2  
DISCOUNT FACTORS ARE &  
5\*2  
END ALTERNATIVE 2

\*  
\*

BEGIN ALTERNATIVE 3  
ALTERNATIVE NAME IS 'RENT GUARANTEE'  
ALTERNATIVE DESCRIPTION IS &  
'GUARANTEE RENT TO BUILDER/OWNER'  
ECONOMIC LIFE IS 15 YEARS  
EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
2\*5800.00 13\*0.00  
EXPENSE ITEM 2 IS 'LEASE:RENT: ' &  
2\*0.00 13\*3480.00  
EXPENSE ITEM 3 IS 'SERVICES: : ' &  
2\*0.00 13\*48.00  
EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
2\*0.00 13\*2070.00  
INFLATION FACTORS ARE &  
1\*2 1\*1 2\*2  
DISCOUNT FACTORS ARE &  
4\*2  
END ALTERNATIVE 3

\*  
\*

BEGIN ALTERNATIVE 4  
ALTERNATIVE NAME IS 'MCA CONSTRUCTION'  
ALTERNATIVE DESCRIPTION IS &  
'CONVENTIONAL AND MCA CONSTRUCTION' &  
'NO PAYMENT BY ROP UPON TRANSFER OF PROPERTY'  
ECONOMIC LIFE IS 15 YEARS  
EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
1\*5800.00 1\*2320.00 13\*0.00  
EXPENSE ITEM 2 IS ' DESIGN: AND:CONSTRUCTION' &  
1\*21538.00 1\*14406.00 13\*0.00  
EXPENSE ITEM 3 IS 'UTILITIES: : ' &  
1\*0.00 1\*1054.80 13\*1758.00  
EXPENSE ITEM 4 IS 'MAINTENANCE: AND: REPAIR' &  
1\*0.00 1\*162.00 13\*270.00  
EXPENSE ITEM 5 IS 'EQUIPMENT: : ' &  
1\*418.20 1\*278.80 13\*11.50  
EXPENSE ITEM 6 IS 'SERVICES: : ' &  
1\*0.00 1\*226.80 13\*378.00  
INFLATION FACTORS ARE &  
1\*2 1\*1 4\*2  
DISCOUNT FACTORS ARE &  
6\*2  
END ALTERNATIVE 4

\*  
\*  
BEGIN ALTERNATIVE 5  
ALTERNATIVE NAME IS 'TRAILER'  
ALTERNATIVE DESCRIPTION IS &  
'TRAILER/RELOCATABLE' &  
'CONSTRUCTION ON LAND AREAS UNDER US CONTROL UNIT'  
ECONOMIC LIFE IS 15 YEARS  
EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
1\*2900.00 1\*1450.00 13\*0.00  
EXPENSE ITEM 2 IS ' DESIGN: AND: CONSTRUCTION' &  
2\*6250.00 13\*0.00  
EXPENSE ITEM 3 IS 'SERVICES: : ' &  
1\*0.00 1\*189.00 13\*378.00  
EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
1\*0.00 1\*804.00 13\*1608.00  
EXPENSE ITEM 5 IS 'MAINTENANCE: AND: REPAIR' &  
1\*0.00 1\*270.00 9\*540.00 4\*792.00  
EXPENSE ITEM 6 IS 'TRANSPORT: : ' &  
2\*1625.00 13\*0.00  
INFLATION FACTORS ARE &  
1\*2 1\*1 4\*2  
DISCOUNT FACTORS ARE &  
6\*2  
END ALTERNATIVE 5  
\*  
\*

#### BEGIN SOURCE/DERIVATION

Cost estimation was performed by the estimators in the District Office. Costs were made in 1985 dollars. Maintenance, repair, utilities, equipment and services costs estimates were made by the DEH staff with the assistance of the district office.

Two inflation indices were used. One was developed by the Mobile DO and the other was published by OSD.

#### ALTERNATIVE 1 ROP LEASE

Lease rent, services, utilities, and M&R costs are specified in the lease contract and will increase with inflation.

#### ALTERNATIVE 2 BUILD TO LEASE

Lease rent, services, utilities, and M&R costs are specified in the lease contract and will increase with inflation.

#### ALTERNATIVE 3 RENTAL GUARANTEE

Lease reflects estimated BAQ/VHA payments. Services, utilities and M&R are specified in the Lease Contract.

#### ALTERNATIVE 4 MCA CONSTRUCTION

MCA construction cost was developed by use of the Tri-Service cost model.  
(\$71,888 per unit) x 500 units = \$35,944,000  
Utilities costs are based on historical data, \$3,516 per unit.

M&R costs are also based on historical data, \$540 per unit/year.  
Service costs reflect garbage collection and entomological services. This cost is based on current annual costs per unit in Panama @ \$756/unit/year.

Equipment costs reflect	washer/dryer	\$422
	range	\$722
	refrigerator	\$250
		-----
		\$1,394 per unit

\$1394 X 500 units = \$697,000

Maintenance and repair of equipment was estimated to average \$23/unit/year.

#### ALTERNATIVE 5 TRAILERS/RELOCATABLE HOUSING UNITS

Each unit was estimated to cost \$25,000 including furnishings.  
Transportation costs (shipping) is estimated to be \$6,000 per unit.  
Utilities, M&R and Equipment are based on historical data.

END SOURCE/DERIVATION

\*

\*

BEGIN GRAPHICS 1

PLOT ALTERNATIVES 1 2 3 4 5

END GRAPHICS 1

\*

\*

BEGIN SENSITIVITY ANALYSIS 1

TITLE IS 'Increase of M&R costs for alt 5 vs next lowest cost alt #4'

ALTERNATIVES ARE 4 5

CHANGE 5 5

LIMIT IS 50.00

RANK ALTERNATIVE 4 FIRST

END SENSITIVITY ANALYSIS 1

\*

\*

BEGIN RESULTS

The lowest cost alternative is the trailer/relocatable housing units alternative. It is more than \$22 Million less expensive than any other. A sensitivity analysis which allowed the estimated maintenance costs to increase by as much as 50% was performed. The trailer/relocatable alternative remained the lowest option.

It is recommended that the trailer/locatable building alternative be funded.

END RESULTS

\*

\*

STOP RUN

E X E C U T I V E   S U M M A R Y   R E P O R T

PAGE 001

PROJECT TITLE : PANAMA HOUSING  
PROJECT OBJECTIVE : DETERMINE LEAST COST METHOD OF HOUSING 500 FAM  
DISCOUNT RATE : 8.60%  
PERIOD OF ANALYSIS: 15 YEARS  
START YEAR : 1985  
BASE YEAR : 1985

ASSUMPTIONS OF THE ANALYSIS:

For the conventional MCA construction alternative (#4), it is assumed that there will be no payment made by the Republic of Panama upon the transfer of the property in 1999.

Complete beneficial occupancy for all alternatives will occur in 1987.

Delivery schedules are assumed to be 60/40% for MCA units and 50/50% for trailer/relocatable units.

Lease and rental Guarantee units will be located on privately owned land.

The discount rate is 8.60%, based on 10 year treasury securities.

ALTERNATIVES CONSIDERED FOR THIS ANALYSIS:

There are five alternatives analyzed to meet the requirement of housing 500 families. These are:

1. Lease housing through the Republic of Panama - the Army would enter into an agreement to lease 500 units from the ROP.
2. Build to lease - 500 housing units would be constructed by a private developer and leased to the Army.
3. Rental guarantee - the Army would guarantee 97% occupancy of 500 rental housing units. Occupants receive BAQ/VHA and pay for rent & utilities.
4. MCA Construction - 500 housing units would be built on-post through conventional MCA construction.
5. Purchase trailers/relocatable units - the Army would provide housing for 500 families on-post in trailers/relocatable housing units.

# EXECUTIVE SUMMARY REPORT

PAGE 002

## ALTERNATIVES COMPARED (\$ in thousands):

ALTERNATIVE NAME	NPV	EUAC
1 ROP LEASE	\$80,157	\$9,710
2 BUILD TO LEASE	\$80,790	\$9,787
3 RENT GUARANTEE	\$71,997	\$8,722
4 MCA CONSTRUCTION	\$69,212	\$8,384
5 TRAILER	\$46,395	\$5,620

## RESULTS AND RECOMMENDATIONS:

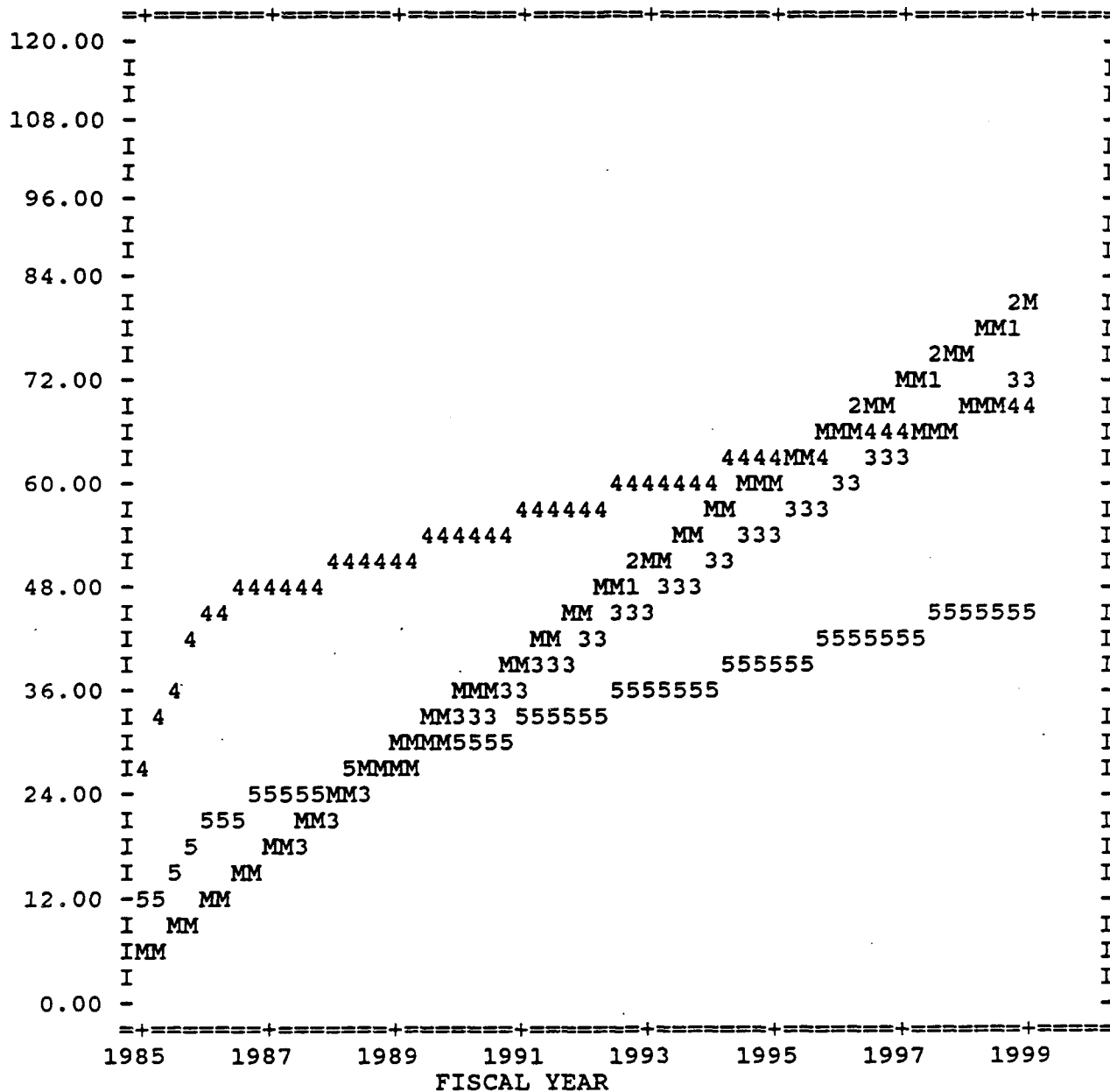
The lowest cost alternative is the trailer/relocatable housing units alternative. It is more than \$22 Million less expensive than any other.

A sensitivity analysis which allowed the estimated maintenance costs to increase by as much as 50% was performed. The trailer/relocatable alternative remained the lowest option.

It is recommended that the trailer/locatable building alternative be funded.

ACTION OFFICER: BOB N  
ORGANIZATION : USA-CERL

E C O N O M I C   A N A L Y S I S   G R A P H   1  
CUMULATIVE NET PRESENT VALUE (\$ in millions)



LEGEND	DESCRIPTION
1	ROP LEASE
2	BUILD TO LEASE
3	RENT GUARANTEE
4	MCA CONSTRUCTION

LEGEND	DESCRIPTION
5	TRAILER
M	MERGING DATA



FILENAME: PANAMAJL  
16 DEC 1987

L I F E C Y C L E C O S T R E P O R T

PAGE 001

PROJECT/PROGRAM COSTS (\$ in thousands)

ALTERNATIVE 1: ROP LEASE

YEAR	LEASE RENT (01)	SERVICES (02)	UTILITIES (03)	MAINTENANCE AND REPAIR (04)	ALLOWANCE
1985	\$0	\$0	\$0	\$0	\$5,943
1986	\$0	\$0	\$0	\$0	\$6,240
1987	\$4,263	\$346	\$2,325	\$488	\$13
1988	\$4,562	\$363	\$2,441	\$512	\$14
1989	\$4,881	\$381	\$2,563	\$538	\$14
1990	\$5,223	\$400	\$2,691	\$565	\$15
1991	\$5,589	\$420	\$2,826	\$593	\$16
1992	\$5,980	\$441	\$2,967	\$623	\$17
1993	\$6,398	\$463	\$3,116	\$654	\$17
1994	\$6,846	\$486	\$3,271	\$687	\$18
1995	\$7,325	\$511	\$3,435	\$721	\$19
1996	\$7,838	\$536	\$3,607	\$757	\$20
1997	\$8,387	\$563	\$3,787	\$795	\$21
1998	\$8,974	\$591	\$3,976	\$835	\$22
1999	\$9,602	\$621	\$4,175	\$876	\$23
%NPV	51.54	3.76	25.26	5.30	14.14

YEAR	TOTAL ANNUAL OUTLAYS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1985	\$5,943	\$5,703	\$5,703
1986	\$6,240	\$5,514	\$11,217
1987	\$7,435	\$6,050	\$17,267
1988	\$7,892	\$5,913	\$23,180
1989	\$8,377	\$5,779	\$28,959
1990	\$8,894	\$5,651	\$34,610
1991	\$9,444	\$5,524	\$40,134
1992	\$10,028	\$5,401	\$45,535
1993	\$10,648	\$5,281	\$50,816
1994	\$11,308	\$5,165	\$55,981
1995	\$12,011	\$5,051	\$61,032
1996	\$12,758	\$4,941	\$65,973
1997	\$13,553	\$4,832	\$70,805
1998	\$14,398	\$4,727	\$75,532
1999	\$15,297	\$4,625	\$80,157

EQUIVALENT UNIFORM ANNUAL COST = \$9,710 (8.60% DISCOUNT RATE, 15 YEARS)  
 EXPENSE ITEM 1 USED INFLATION INDEX 1 - MOBILE PROJECTION.  
 EXPENSE ITEMS 2, 3, 4 AND 5 USED INFLATION INDEX 2 - OSD GENERAL.

L I F E C Y C L E C O S T R E P O R T  
PROJECT/PROGRAM COSTS (\$ in thousands)

PAGE 002

ALTERNATIVE 2: BUILD TO LEASE

YEAR	ALLOWANCES (01)	LEASE RENT (02)	SERVICES (03)	UTILITIES (04)	MAINTENANCE (05)
1985	\$5,943	\$0	\$0	\$0	\$0
1986	\$6,240	\$0	\$0	\$0	\$0
1987	\$0	\$4,761	\$54	\$2,000	\$637
1988	\$0	\$5,094	\$57	\$2,100	\$669
1989	\$0	\$5,451	\$60	\$2,205	\$702
1990	\$0	\$5,832	\$63	\$2,315	\$738
1991	\$0	\$6,241	\$66	\$2,431	\$774
1992	\$0	\$6,677	\$69	\$2,552	\$813
1993	\$0	\$7,145	\$73	\$2,680	\$854
1994	\$0	\$7,645	\$76	\$2,814	\$897
1995	\$0	\$8,180	\$80	\$2,954	\$941
1996	\$0	\$8,753	\$84	\$3,102	\$988
1997	\$0	\$9,365	\$88	\$3,257	\$1,038
1998	\$0	\$10,021	\$93	\$3,420	\$1,090
1999	\$0	\$10,722	\$97	\$3,591	\$1,144
%NPV	13.88	57.11	0.58	21.56	6.87

YEAR	TOTAL ANNUAL OUTLAYS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1985	\$5,943	\$5,703	\$5,703
1986	\$6,240	\$5,514	\$11,217
1987	\$7,452	\$6,063	\$17,280
1988	\$7,920	\$5,933	\$23,213
1989	\$8,418	\$5,807	\$29,020
1990	\$8,948	\$5,684	\$34,704
1991	\$9,512	\$5,564	\$40,268
1992	\$10,111	\$5,447	\$45,715
1993	\$10,752	\$5,332	\$51,047
1994	\$11,432	\$5,220	\$56,267
1995	\$12,155	\$5,112	\$61,379
1996	\$12,927	\$5,006	\$66,385
1997	\$13,748	\$4,901	\$71,286
1998	\$14,624	\$4,801	\$76,087
1999	\$15,554	\$4,703	\$80,790

EQUIVALENT UNIFORM ANNUAL COST = \$9,787 (8.60% DISCOUNT RATE, 15 YEARS)  
EXPENSE ITEM 2 USED INFLATION INDEX 1 - MOBILE PROJECTION.  
EXPENSE ITEMS 1, 3, 4 AND 5 USED INFLATION INDEX 2 - OSD GENERAL.

L I F E   C Y C L E   C O S T   R E P O R T  
PROJECT/PROGRAM COSTS (\$ in thousands)

PAGE 003

ALTERNATIVE 3: RENT GUARANTEE

YEAR	ALLOWANCES (01)	LEASE RENT (02)	SERVICES (03)	UTILITIES (04)	TOTAL ANNUAL OUTLAYS
1985	\$5,943	\$0	\$0	\$0	\$5,943
1986	\$6,240	\$0	\$0	\$0	\$6,240
1987	\$0	\$4,121	\$54	\$2,339	\$6,514
1988	\$0	\$4,410	\$57	\$2,455	\$6,922
1989	\$0	\$4,719	\$60	\$2,578	\$7,357
1990	\$0	\$5,049	\$63	\$2,707	\$7,819
1991	\$0	\$5,402	\$66	\$2,843	\$8,311
1992	\$0	\$5,780	\$69	\$2,985	\$8,834
1993	\$0	\$6,185	\$73	\$3,134	\$9,392
1994	\$0	\$6,618	\$76	\$3,291	\$9,985
1995	\$0	\$7,081	\$80	\$3,455	\$10,616
1996	\$0	\$7,577	\$84	\$3,628	\$11,289
1997	\$0	\$8,107	\$88	\$3,809	\$12,004
1998	\$0	\$8,675	\$93	\$4,000	\$12,768
1999	\$0	\$9,282	\$97	\$4,200	\$13,579
%NPV	15.58	55.47	0.66	28.29	

YEAR	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1985	\$5,703	\$5,703
1986	\$5,514	\$11,217
1987	\$5,300	\$16,517
1988	\$5,187	\$21,704
1989	\$5,075	\$26,779
1990	\$4,967	\$31,746
1991	\$4,862	\$36,608
1992	\$4,758	\$41,366
1993	\$4,658	\$46,024
1994	\$4,560	\$50,584
1995	\$4,465	\$55,049
1996	\$4,372	\$59,421
1997	\$4,280	\$63,701
1998	\$4,191	\$67,892
1999	\$4,105	\$71,997

EQUIVALENT UNIFORM ANNUAL COST = \$8,722 (8.60% DISCOUNT RATE, 15 YEARS)  
EXPENSE ITEM 2 USED INFLATION INDEX 1 - MOBILE PROJECTION.  
EXPENSE ITEMS 1, 3 AND 4 USED INFLATION INDEX 2 - OSD GENERAL.

## L I F E C Y C L E C O S T R E P O R T

PAGE 004

## PROJECT/PROGRAM COSTS (\$ in thousands)

## ALTERNATIVE 4: MCA CONSTRUCTION

YEAR	ALLOWANCES (01)	DESIGN AND CONSTRUCTION (02)	UTILITIES (03)	MAINTENANCE AND REPAIR (04)	EQUIPMENT (05)
1985	\$5,943	\$22,279	\$0	\$0	\$420
1986	\$2,496	\$15,945	\$1,135	\$174	\$300
1987	\$0	\$0	\$1,986	\$305	\$100
1988	\$0	\$0	\$2,085	\$320	\$100
1989	\$0	\$0	\$2,190	\$336	\$100
1990	\$0	\$0	\$2,299	\$353	\$100
1991	\$0	\$0	\$2,414	\$371	\$100
1992	\$0	\$0	\$2,535	\$389	\$100
1993	\$0	\$0	\$2,662	\$409	\$100
1994	\$0	\$0	\$2,795	\$429	\$100
1995	\$0	\$0	\$2,934	\$451	\$100
1996	\$0	\$0	\$3,081	\$473	\$200
1997	\$0	\$0	\$3,235	\$497	\$200
1998	\$0	\$0	\$3,397	\$522	\$200
1999	\$0	\$0	\$3,567	\$548	\$200
%NPV	11.43	51.25	26.44	4.06	1.10

YEAR	SERVICES (06)	TOTAL ANNUAL OUTLAYS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1985	\$0	\$28,651	\$27,493	\$27,493
1986	\$244	\$20,294	\$17,933	\$45,426
1987	\$427	\$2,731	\$2,222	\$47,648
1988	\$448	\$2,867	\$2,148	\$49,796
1989	\$471	\$3,011	\$2,078	\$51,874
1990	\$494	\$3,161	\$2,008	\$53,882
1991	\$519	\$3,320	\$1,942	\$55,824
1992	\$545	\$3,486	\$1,878	\$57,702
1993	\$572	\$3,660	\$1,816	\$59,518
1994	\$601	\$3,843	\$1,754	\$61,272
1995	\$631	\$4,035	\$1,697	\$62,969
1996	\$662	\$4,236	\$1,641	\$64,610
1997	\$696	\$4,449	\$1,586	\$66,196
1998	\$730	\$4,671	\$1,533	\$67,729
1999	\$767	\$4,905	\$1,483	\$69,212
-----				
%NPV	5.69			

EQUIVALENT UNIFORM ANNUAL COST = \$8,384 (8.60% DISCOUNT RATE, 15 YEARS)  
 EXPENSE ITEM 2 USED INFLATION INDEX 1 - MOBILE PROJECTION.  
 EXPENSE ITEMS 1, 3, 4, 5 AND 6 USED INFLATION INDEX 2 - OSD GENERAL.

## L I F E C Y C L E C O S T R E P O R T

PAGE 005

## PROJECT/PROGRAM COSTS (\$ in thousands)

## ALTERNATIVE 5: TRAILER

YEAR	ALLOWANCES (01)	DESIGN AND CONSTRUCTION (02)	SERVICES (03)	UTILITIES (04)	MAINTENANCE AND REPAIR (05)
1985	\$2,972	\$6,465	\$0	\$0	\$0
1986	\$1,560	\$6,918	\$203	\$865	\$291
1987	\$0	\$0	\$427	\$1,817	\$610
1988	\$0	\$0	\$448	\$1,907	\$641
1989	\$0	\$0	\$471	\$2,003	\$673
1990	\$0	\$0	\$494	\$2,103	\$706
1991	\$0	\$0	\$519	\$2,208	\$742
1992	\$0	\$0	\$545	\$2,318	\$779
1993	\$0	\$0	\$572	\$2,434	\$818
1994	\$0	\$0	\$601	\$2,556	\$858
1995	\$0	\$0	\$631	\$2,684	\$901
1996	\$0	\$0	\$662	\$2,818	\$1,388
1997	\$0	\$0	\$696	\$2,959	\$1,457
1998	\$0	\$0	\$730	\$3,107	\$1,530
1999	\$0	\$0	\$767	\$3,262	\$1,607
%NPV	9.12	26.55	8.41	35.75	13.41

YEAR	TRANSPORT	TOTAL ANNUAL OUTLAYS (06)	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1985	\$1,665	\$11,102	\$10,654	\$10,654
1986	\$1,748	\$11,585	\$10,237	\$20,891
1987	\$0	\$2,854	\$2,321	\$23,212
1988	\$0	\$2,996	\$2,245	\$25,457
1989	\$0	\$3,147	\$2,171	\$27,628
1990	\$0	\$3,303	\$2,099	\$29,727
1991	\$0	\$3,469	\$2,030	\$31,757
1992	\$0	\$3,642	\$1,962	\$33,719
1993	\$0	\$3,824	\$1,896	\$35,615
1994	\$0	\$4,015	\$1,833	\$37,448
1995	\$0	\$4,216	\$1,773	\$39,221
1996	\$0	\$4,868	\$1,885	\$41,106
1997	\$0	\$5,112	\$1,823	\$42,929
1998	\$0	\$5,367	\$1,762	\$44,691
1999	\$0	\$5,636	\$1,704	\$46,395

-----  
 %NPV                    6.77

EQUIVALENT UNIFORM ANNUAL COST = \$5,620 (8.60% DISCOUNT RATE, 15 YEARS)

EXPENSE ITEM 2 USED INFLATION INDEX 1 - MOBILE PROJECTION.  
 EXPENSE ITEMS 1, 3, 4, 5 AND 6 USED INFLATION INDEX 2 - OSD GENERAL.



## SOURCE AND DERIVATION OF COSTS AND BENEFITS:

Cost estimation was performed by the estimators in the District Office.

Costs were made in 1985 dollars. Maintenance, repair, utilities, equipment and services costs estimates were made by the DEH staff with the assistance of the district office.

Two inflation indices were used. One was developed by the Mobile DO and the other was published by OSD.

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Lease rent, services, utilities, and M&R costs are specified in the lease contract and will increase with inflation.

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Lease reflects estimated BAQ/VHA payments. Services, utilities and M&R are specified in the Lease Contract.

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MCA construction cost was developed by use of the Tri-Service cost model.  
(\$71,888 per unit) x 500 units = \$35,944,000

Utilities costs are based on historical data, \$3,516 per unit.

M&R costs are also based on historical data, \$540 per unit/year.

Service costs reflect garbage collection and entomological services. This cost is based on current annual costs per unit in Panama @ \$756/unit/year.

Equipment costs reflect	washer/dryer	\$422
	range	\$722
	refrigerator	\$250
	-----	
		\$1,394 per unit

\$1394 X 500 units = \$697,000

Maintenance and repair of equipment was estimated to average \$23/unit/year.

## ALTERNATIVE 5 TRAILERS/RELOCATABLE HOUSING UNITS

Each unit was estimated to cost \$25,000 including furnishings.  
Transportation costs (shipping) is estimated to be \$6,000 per unit.

Utilities, M&R and Equipment are based on historical data.

FILENAME: PANAMAJL

16 DEC 1987  
PAGE 001

RANKING SENSITIVITY ANALYSIS  
(\$ in thousands)

SENSITIVITY ANALYSIS NUMBER ..... 01  
TITLE ..... Increase of M&R costs for alt  
5 vs next lowest cost alt #4  
ALLOWABLE CHANGE ..... 50.00 PERCENT

THIS SENSITIVITY ANALYSIS CHECKS FOR ALTERNATIVE 4 TO BE RANKED  
FIRST AS A RESULT OF CHANGES IN THE EXPENSE ITEM(S) LISTED BELOW:

ALTERNATIVE	EXPENSE ITEM(S)
4	** NOTHING CHANGED **
5	5

THE SELECTED EXPENSE ITEMS ARE ALLOWED TO VARY FROM A VALUE OF 100%  
LESS THAN THEIR INPUT VALUE TO 50.00% MORE THAN THEIR INPUT VALUE.

ALTERNATIVE	NET PRESENT VALUE
5	\$46,395
4	\$69,212

INSENSITIVE WITHIN THE ALLOWABLE PERCENT OF CHANGE.

INPUT LISTING  
LINES 000101-000150

0101: 2\*0.00 13\*1770.00  
0102: EXPENSE ITEM 5 IS 'MAINTENANCE: : ' &  
0103: 2\*0.00 13\*564.00  
0104: INFLATION FACTORS ARE &  
0105: 1\*2 1\*1 3\*2  
0106: DISCOUNT FACTORS ARE &  
0107: 5\*2  
0108: END ALTERNATIVE 2  
0109: \*  
0110: \*  
0111: BEGIN ALTERNATIVE 3  
0112: ALTERNATIVE NAME IS 'RENT GUARANTEE'  
0113: ALTERNATIVE DESCRIPTION IS &  
0114: 'GUARANTEE RENT TO BUILDER/OWNER'  
0115: ECONOMIC LIFE IS 15 YEARS  
0116: EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
0117: 2\*5800.00 13\*0.00  
0118: EXPENSE ITEM 2 IS 'LEASE:RENT: ' &  
0119: 2\*0.00 13\*3480.00  
0120: EXPENSE ITEM 3 IS 'SERVICES: : ' &  
0121: 2\*0.00 13\*48.00  
0122: EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
0123: 2\*0.00 13\*2070.00  
0124: INFLATION FACTORS ARE &  
0125: 1\*2 1\*1 2\*2  
0126: DISCOUNT FACTORS ARE &  
0127: 4\*2  
0128: END ALTERNATIVE 3  
0129: \*  
0130: \*  
0131: BEGIN ALTERNATIVE 4  
0132: ALTERNATIVE NAME IS 'MCA CONSTRUCTION'  
0133: ALTERNATIVE DESCRIPTION IS &  
0134: 'CONVENTIONAL AND MCA CONSTRUCTION' &  
0135: 'NO PAYMENT BY ROP UPON TRANSFER OF PROPERTY'  
0136: ECONOMIC LIFE IS 15 YEARS  
0137: EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
0138: 1\*5800.00 1\*2320.00 13\*0.00  
0139: EXPENSE ITEM 2 IS ' DESIGN: AND:CONSTRUCTION' &  
0140: 1\*21538.00 1\*14406.00 13\*0.00  
0141: EXPENSE ITEM 3 IS 'UTILITIES: : ' &  
0142: 1\*0.00 1\*1054.80 13\*1758.00  
0143: EXPENSE ITEM 4 IS 'MAINTENANCE: AND: REPAIR' &  
0144: 1\*0.00 1\*162.00 13\*270.00  
0145: EXPENSE ITEM 5 IS 'EQUIPMENT: : ' &  
0146: 1\*418.20 1\*278.80 13\*11.50  
0147: EXPENSE ITEM 6 IS 'SERVICES: : ' &  
0148: 1\*0.00 1\*226.80 13\*378.00  
0149: INFLATION FACTORS ARE &  
0150: 1\*2 1\*1 4\*2

I N P U T   L I S T I N G  
L I N E S   000151-000200

0151: DISCOUNT FACTORS ARE &  
0152: 6\*2  
0153: END ALTERNATIVE 4  
0154: \*  
0155: \*  
0156: BEGIN ALTERNATIVE 5  
0157: ALTERNATIVE NAME IS 'TRAILER'  
0158: ALTERNATIVE DESCRIPTION IS &  
0159: 'TRAILER/RELOCATABLE' &  
0160: 'CONSTRUCTION ON LAND AREAS UNDER US CONTROL UNIT'  
0161: ECONOMIC LIFE IS 15 YEARS  
0162: EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
0163: 1\*2900.00 1\*1450.00 13\*0.00  
0164: EXPENSE ITEM 2 IS ' DESIGN: AND: CONSTRUCTION' &  
0165: 2\*6250.00 13\*0.00  
0166: EXPENSE ITEM 3 IS 'SERVICES: : ' &  
0167: 1\*0.00 1\*189.00 13\*378.00  
0168: EXPENSE ITEM 4 IS 'UTILITIES: : ' &  
0169: 1\*0.00 1\*804.00 13\*1608.00  
0170: EXPENSE ITEM 5 IS 'MAINTENANCE: AND: REPAIR' &  
0171: 1\*0.00 1\*270.00 9\*540.00 4\*792.00  
0172: EXPENSE ITEM 6 IS 'TRANSPORT: : ' &  
0173: 2\*1625.00 13\*0.00  
0174: INFLATION FACTORS ARE &  
0175: 1\*2 1\*1 4\*2  
0176: DISCOUNT FACTORS ARE &  
0177: 6\*2  
0178: END ALTERNATIVE 5  
0179: \*  
0180: \*  
0181: BEGIN SOURCE/DERIVATION  
0182: Cost estimation was performed by the estimators in the District Office.  
0183: Costs were made in 1985 dollars. Maintenance, repair, utilities,  
0184: equipment and services costs estimates were made by the DEH staff with t  
0185: assistance of the district office.  
0186:  
0187: Two inflation indices were used. One was developed by the Mobile DO and  
0188: other was published by OSD.  
0189:  
0190: ALTERNATIVE 1 ROP LEASE  
0191: Lease rent, services, utilities, and M&R costs are specified in the leas  
0192: contract and will increase with inflation.  
0193:  
0194: ALTERNATIVE 2 BUILD TO LEASE  
0195: Lease rent, services, utilities, and M&R costs are specified in the leas  
0196: contract and will increase with inflation.  
0197:  
0198: ALTERNATIVE 3 RENTAL GUARANTEE  
0199: Lease reflects estimated BAQ/VHA payments. Services, utilities and M&R  
0200: specified in the Lease Contract.

INPUT LISTING  
LINES 000001-000050

0001: \*  
0002: \* VERSION 1.0  
0003: \*  
0004: \*  
0005: PROJECT TITLE IS 'PANAMA HOUSING'  
0006: ACTION OFFICER IS 'BOB N'  
0007: ORGANIZATION IS 'USA-CERL'  
0008: OBJECTIVE IS 'DETERMINE LEAST COST METHOD OF HOUSING 500 FAM'  
0009: \*  
0010: \*  
0011: BEGIN ASSUMPTIONS  
0012: For the conventional MCA construction alternative (#4), it is assumed  
0013: that there will be no payment made by the Republic of Panama upon the  
0014: transfer of the property in 1999.  
0015:  
0016: Complete beneficial occupancy for all alternatives will occur in 1987.  
0017:  
0018: Delivery schedules are assumed to be 60/40% for MCA units and 50/50% for  
0019: trailer/relocatable units.  
0020:  
0021: Lease and rental Guarantee units will be located on privately owned land  
0022:  
0023: The discount rate is 8.60%, based on 10 year treasury securities.  
0024:  
0025: END ASSUMPTIONS  
0026: \*  
0027: \*  
0028: BEGIN DISCUSSION OF ALTERNATIVES  
0029: There are five alternatives analyzed to meet the requirement of housing  
0030: families. These are:  
0031:  
0032: 1. Lease housing through the Republic of Panama - the Army would enter  
0033: an agreement to lease 500 units from the ROP.  
0034:  
0035: 2. Build to lease - 500 housing units would be constructed by a private  
0036: developer and leased to the Army.  
0037:  
0038: 3. Rental guarantee - the Army would guarantee 97% occupancy of 500 rental  
0039: housing units. Occupants receive BAQ/VHA and pay for rent & utilities.  
0040:  
0041: 4. MCA Construction - 500 housing units would be built on-post through  
0042: conventional MCA construction.  
0043:  
0044: 5. Purchase trailers/relocatable units - the Army would provide housing  
0045: for 500 families on-post in trailers/relocatable housing units.  
0046:  
0047: END DISCUSSION OF ALTERNATIVES  
0048: \*  
0049: \*  
0050: BEGIN DATA

# INPUT LISTING

LINE 000051-000100

0051: PERIOD OF ANALYSIS IS 15 YEARS  
 0052: START YEAR IS 1985  
 0053: BASE YEAR IS 1985  
 0054: DISCOUNT RATE IS 8.60  
 0055: GLOBAL DISCOUNTING CONVENTION IS 2  
 0056: INFLATION INDEX 1 IS 'MOBILE PROJECTION' &  
 0057: 15\*0.07  
 0058: INFLATION INDEX 2 IS 'OSD GENERAL' &  
 0059: 15\*0.05  
 0060: INFLATION INDEX 3 IS 'NO INFLATION' &  
 0061: 15\*0.00  
 0062: SECONDARY ANALYSIS  
 0063: COST STORED IN 'THOUSANDS OF' DOLLARS  
 0064: END DATA  
 0065: \*  
 0066: \*  
 0067: BEGIN ALTERNATIVE 1  
 0068: ALTERNATIVE NAME IS 'ROP LEASE'  
 0069: ALTERNATIVE DESCRIPTION IS &  
 0070: 'LEASE HOUSING THROUGH THE REPUBLIC OF PANAMA'  
 0071: ECONOMIC LIFE IS 15 YEARS  
 0072: EXPENSE ITEM 1 IS 'LEASE:RENT: ' &  
 0073: 2\*0.00 13\*3600.00  
 0074: EXPENSE ITEM 2 IS 'SERVICES: : ' &  
 0075: 2\*0.00 13\*306.00  
 0076: EXPENSE ITEM 3 IS 'UTILITIES: : ' &  
 0077: 2\*0.00 13\*2058.00  
 0078: EXPENSE ITEM 4 IS 'MAINTENANCE: AND: REPAIR' &  
 0079: 2\*0.00 13\*432.00  
 0080: EXPENSE ITEM 5 IS 'ALLOWANCES: : ' &  
 0081: 2\*5800.00 13\*11.50  
 0082: INFLATION FACTORS ARE &  
 0083: 1\*1 4\*2  
 0084: DISCOUNT FACTORS ARE &  
 0085: 5\*2  
 0086: END ALTERNATIVE 1  
 0087: \*  
 0088: \*  
 0089: BEGIN ALTERNATIVE 2  
 0090: ALTERNATIVE NAME IS 'BUILD TO LEASE'  
 0091: ALTERNATIVE DESCRIPTION IS &  
 0092: 'BUILD HOUSING TO LEASE'  
 0093: ECONOMIC LIFE IS 15 YEARS  
 0094: EXPENSE ITEM 1 IS 'ALLOWANCES: : ' &  
 0095: 2\*5800.00 13\*0.00  
 0096: EXPENSE ITEM 2 IS 'LEASE: RENT: ' &  
 0097: 2\*0.00 13\*4020.00  
 0098: EXPENSE ITEM 3 IS 'SERVICES: : ' &  
 0099: 2\*0.00 13\*48.00  
 0100: EXPENSE ITEM 4 IS 'UTILITIES: : ' &

INPUT LISTING  
 LINES 000201-000250

```

0201:
0202: ALTERNATIVE 4  MCA CONSTRUCTION
0203: MCA construction cost was developed by use of the Tri-Service cost mode
0204:   ($71,888 per unit) x 500 units = $35,944,000
0205: Utilities costs are based on historical data, $3,516 per unit.
0206: M&R costs are also based on historical data, $540 per unit/year.
0207: Service costs reflect garbage collection and entomological services. T
0208: cost is based on current annual costs per unit in Panama @ $756/unit/ye
0209: Equipment costs reflect      washer/dryer      $422
0210:                               range              $722
0211:                               refrigerator        $250
0212:                               -----
0213:                               $1,394 per unit
0214:   $1394 X 500 units = $697,000
0215: Maintenance and repair of equipment was estimated to average $23/unit/y
0216:
0217: ALTERNATIVE 5  TRAILERS/RELOCATABLE HOUSING UNITS
0218: Each unit was estimated to cost $25,000 including furnishings.
0219: Transportation costs (shipping) is estimated to be $6,000 per unit.
0220: Utilities, M&R and Equipment are based on historical data.
0221:
0222:
0223:
0224:
0225:
0226:
0227:
0228: END SOURCE/DERIVATION
0229: *
0230: *
0231: BEGIN GRAPHICS 1
0232: PLOT ALTERNATIVES 1 2 3 4 5
0233: END GRAPHICS 1
0234: *
0235: *
0236: BEGIN SENSITIVITY ANALYSIS 1
0237: TITLE IS 'Increase of M&R costs for alt 5 vs next lowest cost alt #4'
0238: ALTERNATIVES ARE 4 5
0239: CHANGE 5 5
0240: LIMIT IS 50.00
0241: RANK ALTERNATIVE 4 FIRST
0242: END SENSITIVITY ANALYSIS 1
0243: *
0244: *
0245: BEGIN RESULTS
0246: The lowest cost alternative is the trailer/relocatable housing units
0247: alternative. It is more than $22 Million less expensive than any other
0248: A sensitivity analysis which allowed the estimated maintenance costs to
0249: increase by as much as 50% was performed. The trailer/relocatable
0250: alternative remained the lowest option.
  
```

I N P U T L I S T I N G  
L I N E S 000251-000300

0251:  
0252: It is recommended that the trailer/locatable building alternative be fun  
0253:  
0254: END RESULTS  
0255: \*  
0256: \*  
0257: STOP RUN  
  
\*\* END OF RUN \*\*



CASE STUDY  
CONSOLIDATED MAINTENANCE FACILITY

\*  
PROJECT TITLE IS &  
'Consolidated Maintenance Facility'  
ACTION OFFICER IS &  
'Bernice Ellis'  
ORGANIZATION IS &  
'DEH, Fort Bowie'  
OBJECTIVE IS &  
'Provide 210,000 sf of maintenance shops.'  
\*

BEGIN ASSUMPTIONS

Per regulatory guidelines, a discount rate of 10% is used.  
Training is 1% of equipment acquisition cost.  
Equipment maintenance is 4.5% of acquisition cost.  
New construction will take 3 years.  
Equipment life is 12 years.

END ASSUMPTIONS

BEGIN DISCUSSION OF ALTERNATIVES

The following alternatives were considered in this economic analysis:

NEW CONSTRUCTION: Construction of a consolidated maintenance facility.  
This alternative replaces the existing vintage temporary buildings and  
provides the necessary 210,000 sf of maintenance space.

STATUS QUO (MODIFIED): Upgrade the existing facilities. Currently, 28  
separate dispersed facilities exist spread over a 5 mile radius. These  
facilities will be modified to provide the necessary maintenance space.  
END DISCUSSION OF ALTERNATIVES

BEGIN DATA

PERIOD OF ANALYSIS IS 25 YEARS  
START YEAR IS 1989  
BASE YEAR IS 1989  
DISCOUNT RATE IS 10.00  
GLOBAL DISCOUNTING CONVENTION IS 2  
PRIMARY ANALYSIS  
COST STORED IN 'ACTUAL' DOLLARS  
END DATA

BEGIN ALTERNATIVE 1

ALTERNATIVE NAME IS 'Upgrade Status Quo'  
ALTERNATIVE DESCRIPTION IS &  
'Modify and upgrade existing facilities.'  
ECONOMIC LIFE IS 25 YEARS  
EXPENSE ITEM 1 IS 'Initial:Upgrade: ' &  
2\*4823675.00 23\*0.00  
EXPENSE ITEM 2 IS 'Equipment: : ' &  
1\*3540684.00 10\*0.00 1\*3540684.00 13\*0.00  
EXPENSE ITEM 3 IS 'Training: : ' &  
1\*25000.00 24\*0.00  
EXPENSE ITEM 4 IS 'Annual:M & R: ' &  
4\*62960.00 21\*251835.00  
EXPENSE ITEM 5 IS 'Annual:Utilities: ' &  
25\*178012.00  
EXPENSE ITEM 6 IS 'Personnel:Cost: ' &  
25\*9301600.00  
EXPENSE ITEM 7 IS 'MHE:Fuel: ' &  
25\*5000.00  
EXPENSE ITEM 8 IS 'Depot:Transport:Cost' &  
25\*103443.00

25\*26440.00  
 EXPENSE ITEM 10 IS 'Equipment:Maintenance: ' &  
 1\*0.00 24\*297283.00  
 INFLATION FACTORS ARE &  
 10\*0  
 DISCOUNT FACTORS ARE &  
 10\*2  
 RECURRING COSTS ARE &  
 4 5 6 7 8 9 10  
 REFURBISHMENT COSTS ARE &  
 1 2 3  
 END ALTERNATIVE 1  
 \*

BEGIN ALTERNATIVE 2  
 ALTERNATIVE NAME IS 'New Construction'  
 ALTERNATIVE DESCRIPTION IS &  
 'Construction of a consolidated maintenance' &  
 'facility.'  
 ECONOMIC LIFE IS 25 YEARS  
 EXPENSE ITEM 1 IS 'Initial:Construction:Cost' &  
 3\*9000000.00 22\*0.00  
 EXPENSE ITEM 2 IS 'Equipment: : ' &  
 1\*0.00 2\*3123275.00 10\*0.00 2\*3123275.00 10\*0.00  
 EXPENSE ITEM 3 IS 'Training: : ' &  
 1\*0.00 2\*25000.00 22\*0.00  
 EXPENSE ITEM 4 IS 'Annual:M & R: ' &  
 3\*62960.00 22\*234668.00  
 EXPENSE ITEM 5 IS 'Annual:Utilities: ' &  
 3\*173012.00 22\*242030.00  
 EXPENSE ITEM 6 IS 'Personnel: : ' &  
 3\*9301600.00 22\*5699175.00  
 EXPENSE ITEM 7 IS 'MHE:Fuel: ' &  
 3\*5000.00 22\*1800.00  
 EXPENSE ITEM 8 IS 'Vehicle:Usage: ' &  
 3\*26440.00 22\*14730.00  
 EXPENSE ITEM 9 IS 'Equipment:Maintenance: ' &  
 3\*297283.00 22\*312570.00  
 INFLATION FACTORS ARE &  
 9\*0  
 DISCOUNT FACTORS ARE &  
 9\*2  
 SALVAGE VALUE IS 17453984.00  
 RECURRING COSTS ARE &  
 4 5 6 7 8 9  
 NEW COSTS ARE &  
 1 2 3  
 END ALTERNATIVE 2  
 \*

# BEGIN SOURCE/DERIVATION

STATUS QUO: Initial upgrade costs were estimated based on \$50.00 per square foot. Maintenance and repair was estimated at \$1.31 per square foot. Utilities estimates were obtained from DA Facilities Engineering and Housing Annual Summary of Operations, the factor was \$.92 per sq. ft. Personnel costs were estimated as follows:

\$24,047.00 x 283 employees	=	\$6,805,301
\$32,062.00 x 50 contractors	=	\$1,603,100
overtime	=	\$ 893,199
		-----
Total		\$9,301,600

Fuel costs were estimated at \$.84 per gallon consumed.  
 Vehicle usage costs are based on historical data.

NEW CONSTRUCTION: Initial construction cost data was obtained from 415-17.

$\$24,047.15 \times 237 \text{ employees} = \$5,699,175$

Maintenance and repair was estimated at \$1.12 per sq. ft.  
Utilities costs were estimated at \$1.15 per sq. ft.  
Vehicle usage was estimated to be 56% less than status quo.  
Fuel costs were estimated at \$0.84 per gallon consumed.  
END SOURCE/DERIVATION

\*

BEGIN RESULTS

The new construction alternative was found to be the most economical over the 25 year period of analysis. This alternative is recommended to provide the necessary 210,000 sf of maintenance space to ensure mission training and readiness.

END RESULTS

\*

STOP RUN

C>

EXECUTIVE SUMMARY REPORT

PAGE 00

PROJECT TITLE : Consolidated Maintenance Facility  
PROJECT OBJECTIVE : Provide 210,000 sf of maintenance shops.  
DISCOUNT RATE : 10.00%  
PERIOD OF ANALYSIS: 25 YEARS  
START YEAR : 1989  
BASE YEAR : 1989

ASSUMPTIONS OF THE ANALYSIS:

Per regulatory guidelines, a discount rate of 10% is used.  
Training is 1% of equipment acquisition cost.  
Equipment maintenance is 4.5% of acquisition cost.  
New construction will take 3 years.  
Equipment life is 12 years.

ALTERNATIVES CONSIDERED FOR THIS ANALYSIS:

The following alternatives were considered in this economic analysis:

NEW CONSTRUCTION: Construction of a consolidated maintenance facility.  
This alternative replaces the existing vintage temporary buildings and  
provides the necessary 210,000 sf of maintenance space.

STATUS QUO (MODIFIED): Upgrade the existing facilities. Currently, 28  
separate dispersed facilities exist spread over a 5 mile radius. These  
facilities will be modified to provide the necessary maintenance space.

ALTERNATIVES COMPARED:

ALTERNATIVE NAME	NPV	EUAC	SIR	DPP
1 Upgrade Status Quo	\$109,210,293	\$12,031,487		
2 New Construction	\$99,427,630	\$10,953,750	1.34	11.5 YEARS

RESULTS AND RECOMMENDATIONS:

The new construction alternative was found to be the most economical over  
the 25 year period of analysis. This alternative is recommended to provide  
the necessary 210,000 sf of maintenance space to ensure mission training  
and readiness.

ACTION OFFICER: Bernice Ellis  
ORGANIZATION : DEH, Fort Bowie

L I F E C Y C L E C O S T R E P O R T

PAGE 00

PROJECT/PROGRAM COSTS

ALTERNATIVE 1: Upgrade Status Quo

YEAR	Initial Upgrade (01)	Equipment (02)	Training (03)	Annual M & R (04)	Annual Utilities (05)
1989	\$4,823,675	\$3,540,684	\$25,000	\$62,960	\$178,01
1990	\$4,823,675	\$0	\$0	\$62,960	\$178,01
1991	\$0	\$0	\$0	\$62,960	\$178,01
1992	\$0	\$0	\$0	\$62,960	\$178,01
1993	\$0	\$0	\$0	\$251,835	\$178,01
1994	\$0	\$0	\$0	\$251,835	\$178,01
1995	\$0	\$0	\$0	\$251,835	\$178,01
1996	\$0	\$0	\$0	\$251,835	\$178,01
1997	\$0	\$0	\$0	\$251,835	\$178,01
1998	\$0	\$0	\$0	\$251,835	\$178,01
1999	\$0	\$0	\$0	\$251,835	\$178,01
2000	\$0	\$3,540,684	\$0	\$251,835	\$178,01
2001	\$0	\$0	\$0	\$251,835	\$178,01
2002	\$0	\$0	\$0	\$251,835	\$178,01
2003	\$0	\$0	\$0	\$251,835	\$178,01
2004	\$0	\$0	\$0	\$251,835	\$178,01
2005	\$0	\$0	\$0	\$251,835	\$178,01
2006	\$0	\$0	\$0	\$251,835	\$178,01
2007	\$0	\$0	\$0	\$251,835	\$178,01
2008	\$0	\$0	\$0	\$251,835	\$178,01
2009	\$0	\$0	\$0	\$251,835	\$178,01
2010	\$0	\$0	\$0	\$251,835	\$178,01
2011	\$0	\$0	\$0	\$251,835	\$178,01
2012	\$0	\$0	\$0	\$251,835	\$178,01
2013	\$0	\$0	\$0	\$251,835	\$178,01
%NPV	8.04	4.17	0.02	1.62	1.5

## L I F E C Y C L E C O S T R E P O R T

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## PROJECT/PROGRAM COSTS

## ALTERNATIVE 1: Upgrade Status Quo

YEAR	Personnel Cost (06)	MHE Fuel (07)	Depot Transport Cost (08)	Vehicle Usage (09)	Equipment Maintenance (10)
1989	\$9,301,600	\$5,000	\$103,443	\$26,440	
1990	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1991	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1992	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1993	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1994	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1995	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1996	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1997	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1998	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
1999	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2000	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2001	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2002	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2003	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2004	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2005	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2006	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2007	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2008	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2009	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2010	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2011	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2012	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
2013	\$9,301,600	\$5,000	\$103,443	\$26,440	\$297,28
%NPV	81.08	0.04	0.90	0.23	2..

## L I F E C Y C L E C O S T R E P O R T

PAGE 00

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 1: Upgrade Status Quo

YEAR	TOTAL ANNUAL OUTLAYS	PRESENT VALUE	CUMULATIVE NET PRESENT VALUE
1989	\$18,066,814	\$17,226,033	\$17,226,033
1990	\$14,798,413	\$12,827,031	\$30,053,064
1991	\$9,974,738	\$7,859,951	\$37,913,015
1992	\$9,974,738	\$7,145,408	\$45,058,423
1993	\$10,163,613	\$6,618,826	\$51,677,249
1994	\$10,163,613	\$6,017,116	\$57,694,365
1995	\$10,163,613	\$5,470,106	\$63,164,471
1996	\$10,163,613	\$4,972,822	\$68,137,293
1997	\$10,163,613	\$4,520,748	\$72,658,041
1998	\$10,163,613	\$4,109,770	\$76,767,811
1999	\$10,163,613	\$3,736,155	\$80,503,966
2000	\$13,704,297	\$4,579,742	\$85,083,708
2001	\$10,163,613	\$3,087,732	\$88,171,440
2002	\$10,163,613	\$2,807,028	\$90,978,468
2003	\$10,163,613	\$2,551,844	\$93,530,312
2004	\$10,163,613	\$2,319,858	\$95,850,170
2005	\$10,163,613	\$2,108,964	\$97,959,134
2006	\$10,163,613	\$1,917,239	\$99,876,373
2007	\$10,163,613	\$1,742,944	\$101,619,317
2008	\$10,163,613	\$1,584,495	\$103,203,812
2009	\$10,163,613	\$1,440,451	\$104,644,263
2010	\$10,163,613	\$1,309,500	\$105,953,763
2011	\$10,163,613	\$1,190,453	\$107,144,216
2012	\$10,163,613	\$1,082,231	\$108,226,447
2013	\$10,163,613	\$983,846	\$109,210,293

EQUIVALENT UNIFORM ANNUAL COST = \$12,031,487 (10.00% DISCOUNT RATE, 25 YEARS)

## L I F E C Y C L E C O S T R E P O R T

PAGE 00

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 2: New Construction

YEAR	Initial Construction Cost (01)	Equipment (02)	Training (03)	Annual M & R (04)	Annual Utilities (05)
1989	\$9,000,000	\$0	\$0	\$62,960	\$178,0
1990	\$9,000,000	\$3,123,275	\$25,000	\$62,960	\$178,0
1991	\$9,000,000	\$3,123,275	\$25,000	\$62,960	\$178,0
1992	\$0	\$0	\$0	\$234,668	\$242,0
1993	\$0	\$0	\$0	\$234,668	\$242,0
1994	\$0	\$0	\$0	\$234,668	\$242,0
1995	\$0	\$0	\$0	\$234,668	\$242,0
1996	\$0	\$0	\$0	\$234,668	\$242,0
1997	\$0	\$0	\$0	\$234,668	\$242,0
1998	\$0	\$0	\$0	\$234,668	\$242,0
1999	\$0	\$0	\$0	\$234,668	\$242,0
2000	\$0	\$0	\$0	\$234,668	\$242,0
2001	\$0	\$0	\$0	\$234,668	\$242,0
2002	\$0	\$3,123,275	\$0	\$234,668	\$242,0
2003	\$0	\$3,123,275	\$0	\$234,668	\$242,0
2004	\$0	\$0	\$0	\$234,668	\$242,0
2005	\$0	\$0	\$0	\$234,668	\$242,0
2006	\$0	\$0	\$0	\$234,668	\$242,0
2007	\$0	\$0	\$0	\$234,668	\$242,0
2008	\$0	\$0	\$0	\$234,668	\$242,0
2009	\$0	\$0	\$0	\$234,668	\$242,0
2010	\$0	\$0	\$0	\$234,668	\$242,0
2011	\$0	\$0	\$0	\$234,668	\$242,0
2012	\$0	\$0	\$0	\$234,668	\$242,0
2013	\$0	\$0	\$0	\$234,668	\$242,0
%NPV	23.61	6.85	0.04	1.80	2.



## L I F E C Y C L E C O S T R E P O R T

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## PROJECT/PROGRAM COSTS

## ALTERNATIVE 2: New Construction

YEAR	Personnel (06)	MHE Fuel (07)	Vehicle Usage (08)	Equipment Maintenance (09)	TOTAL ANNUAL OUTLAYS
1989	\$9,301,600	\$5,000	\$26,440	\$297,283	\$18,871,2
1990	\$9,301,600	\$5,000	\$26,440	\$297,283	\$22,019,5
1991	\$9,301,600	\$5,000	\$26,440	\$297,283	\$22,019,5
1992	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1993	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1994	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1995	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1996	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1997	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1998	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
1999	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2000	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2001	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2002	\$5,699,175	\$1,800	\$14,730	\$312,570	\$9,628,2
2003	\$5,699,175	\$1,800	\$14,730	\$312,570	\$9,628,2
2004	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2005	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2006	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2007	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2008	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2009	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2010	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2011	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2012	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
2013	\$5,699,175	\$1,800	\$14,730	\$312,570	\$6,504,9
%NPV	64.02	0.03	0.17	2.95	

## L I F E C Y C L E C O S T R E P O R T

PAGE 02

## PROJECT/PROGRAM COSTS

## ALTERNATIVE 2: New Construction

YEAR	PRESENT VALUE	CUMULATIVE PRESENT VALUE	PRESENT VALUE RESIDUAL	CUMULATIVE NET PRESENT VALUE
1989	\$17,993,074	\$17,993,074	\$0	\$17,993,074
1990	\$19,086,216	\$37,079,290	\$0	\$37,079,290
1991	\$17,351,105	\$54,430,395	\$0	\$54,430,395
1992	\$4,659,841	\$59,090,236	\$0	\$59,090,236
1993	\$4,236,219	\$63,326,455	\$0	\$63,326,455
1994	\$3,851,109	\$67,177,564	\$0	\$67,177,564
1995	\$3,501,008	\$70,678,572	\$0	\$70,678,572
1996	\$3,182,735	\$73,861,307	\$0	\$73,861,307
1997	\$2,893,395	\$76,754,702	\$0	\$76,754,702
1998	\$2,630,359	\$79,385,061	\$0	\$79,385,061
1999	\$2,391,235	\$81,776,296	\$0	\$81,776,296
2000	\$2,173,851	\$83,950,147	\$0	\$83,950,147
2001	\$1,976,228	\$85,926,375	\$0	\$85,926,375
2002	\$2,659,170	\$88,585,545	\$0	\$88,585,545
2003	\$2,417,427	\$91,002,972	\$0	\$91,002,972
2004	\$1,484,769	\$92,487,741	\$0	\$92,487,741
2005	\$1,349,791	\$93,837,532	\$0	\$93,837,532
2006	\$1,227,082	\$95,064,614	\$0	\$95,064,614
2007	\$1,115,529	\$96,180,143	\$0	\$96,180,143
2008	\$1,014,116	\$97,194,259	\$0	\$97,194,259
2009	\$921,925	\$98,116,184	\$0	\$98,116,184
2010	\$838,114	\$98,954,298	\$0	\$98,954,298
2011	\$761,921	\$99,716,219	\$0	\$99,716,219
2012	\$692,657	\$100,408,876	\$0	\$100,408,876
2013	\$629,607	\$101,038,563	\$1,610,933	\$99,427,630
%NPV			-1.62	

EQUIVALENT UNIFORM ANNUAL COST = \$10,953,750 (10.00% DISCOUNT RATE, 25 YEARS)

## L I F E C Y C L E C O S T R E P O R T

PAGE 06

## PRIMARY ECONOMIC ANALYSIS

PRESENT ALTERNATIVE: Upgrade Status Quo  
 PROPOSED ALTERNATIVE: New Construction  
 ECONOMIC LIFE (PRESENT): 25 YEARS  
 ECONOMIC LIFE (PROPOSED): 25 YEARS

PROJECT YEAR(S)	RECURRING ANNUAL OPERATING COSTS		DIFFERENTIAL COST	PRESENT VALUE FACTOR	PRESENT VALUE OF DIFFERENTIAL COST
	PRESENT ALTERNATIVE	PROPOSED ALTERNATIVE			
1989	\$9,677,455	\$9,871,295	-\$193,840	0.953	-\$184,819
1990	\$9,974,738	\$9,871,295	\$103,443	0.867	\$89,663
1991	\$9,974,738	\$9,871,295	\$103,443	0.788	\$81,512
1992	\$9,974,738	\$6,504,973	\$3,469,765	0.716	\$2,485,567
1993	\$10,163,613	\$6,504,973	\$3,658,640	0.651	\$2,382,607
1994	\$10,163,613	\$6,504,973	\$3,658,640	0.592	\$2,166,007
1995	\$10,163,613	\$6,504,973	\$3,658,640	0.538	\$1,969,098
1996	\$10,163,613	\$6,504,973	\$3,658,640	0.489	\$1,790,087
1997	\$10,163,613	\$6,504,973	\$3,658,640	0.445	\$1,627,353
1998	\$10,163,613	\$6,504,973	\$3,658,640	0.404	\$1,479,411
1999	\$10,163,613	\$6,504,973	\$3,658,640	0.368	\$1,344,920
2000	\$10,163,613	\$6,504,973	\$3,658,640	0.334	\$1,222,655
2001	\$10,163,613	\$6,504,973	\$3,658,640	0.304	\$1,111,504
2002	\$10,163,613	\$6,504,973	\$3,658,640	0.276	\$1,010,457
2003	\$10,163,613	\$6,504,973	\$3,658,640	0.251	\$918,598
2004	\$10,163,613	\$6,504,973	\$3,658,640	0.228	\$835,089
2005	\$10,163,613	\$6,504,973	\$3,658,640	0.208	\$759,173
2006	\$10,163,613	\$6,504,973	\$3,658,640	0.189	\$690,157
2007	\$10,163,613	\$6,504,973	\$3,658,640	0.171	\$627,415
2008	\$10,163,613	\$6,504,973	\$3,658,640	0.156	\$570,379
2009	\$10,163,613	\$6,504,973	\$3,658,640	0.142	\$518,526
2010	\$10,163,613	\$6,504,973	\$3,658,640	0.129	\$471,386
2011	\$10,163,613	\$6,504,973	\$3,658,640	0.117	\$428,532
2012	\$10,163,613	\$6,504,973	\$3,658,640	0.106	\$389,574
2013	\$10,163,613	\$6,504,973	\$3,658,640	0.097	\$354,159
TOTALS	\$253,037,542	\$172,723,291	\$80,314,251		\$25,139,010
TOTAL PRESENT VALUE OF NEW INVESTMENT					\$30,330,542
PLUS: PRESENT VALUE OF EXISTING ASSETS TO BE USED					\$0
LESS: PRESENT VALUE OF EXISTING ASSETS REPLACED					\$0
LESS: PRESENT VALUE OF TERMINAL VALUE OF ALTERNATIVE					\$1,610,933
TOTAL PRESENT VALUE OF NET INVESTMENT					\$28,719,609
TOTAL PRESENT VALUE OF DIFFERENTIAL COSTS					\$25,139,010
PLUS: PRESENT VALUE OF COST OF REFURBISHMENT OR MODIFICATION ELIMINATED					\$13,363,262
LESS: STATUS QUO SALVAGE VALUE					\$0
TOTAL PRESENT VALUE OF SAVINGS					\$38,502,272
SAVINGS/INVESTMENT RATIO					1.34
DISCOUNTED PAYBACK PERIOD					11.5 YEARS

# L I F E C Y C L E C O S T R E P O R T

PAGE 00

## SOURCE AND DERIVATION OF COSTS AND BENEFITS:

STATUS QUO: Initial upgrade costs were estimated based on \$50.00 per square foot. Maintenance and repair was estimated at \$1.31 per square foot.

Utilities estimates were obtained from DA Facilities Engineering and Housing Annual Summary of Operations, the factor was \$.92 per sq. ft.

Personnel costs were estimated as follows:

\$24,047.00 x 283 employees = \$6,805,301

\$32,062.00 x 50 contractors = \$1,603,100

overtime = \$ 893,199

-----  
Total \$9,301,600

Fuel costs were estimated at \$.84 per gallon consumed.

Vehicle usage costs are based on historical data.

NEW CONSTRUCTION: Initial construction cost data was obtained from 415-17.

Personnel costs were determined by using an average annual salary of

\$24,047.15 x 237 employees = \$5,699,175

Maintenance and repair was estimated at \$1.12 per sq. ft.

Utilities costs were estimated at \$1.15 per sq. ft.

Vehicle usage was estimated to be 56% less than status quo.

Fuel costs were estimated at \$0.84 per gallon consumed.

INPUT LISTING  
LINES 000001-000050

PAGE 00

0001: \*  
0002: PROJECT TITLE IS &  
0003: 'Consolidated Maintenance Facility'  
0004: ACTION OFFICER IS &  
0005: 'Bernice Ellis'  
0006: ORGANIZATION IS &  
0007: 'DEH, Fort Bowie'  
0008: OBJECTIVE IS &  
0009: 'Provide 210,000 sf of maintenance shops.'  
0010: \*  
0011: BEGIN ASSUMPTIONS  
0012: Per regulatory guidelines, a discount rate of 10% is used.  
0013: Training is 1% of equipment acquisition cost.  
0014: Equipment maintenance is 4.5% of acquisition cost.  
0015: New construction will take 3 years.  
0016: Equipment life is 12 years.  
0017: END ASSUMPTIONS  
0018: \*  
0019: BEGIN DISCUSSION OF ALTERNATIVES  
0020: The following alternatives were considered in this economic analysis:  
0021:  
0022: NEW CONSTRUCTION: Construction of a consolidated maintenance facility.  
0023: This alternative replaces the existing vintage temporary buildings and  
0024: provides the necessary 210,000 sf of maintenance space.  
0025:  
0026: STATUS QUO (MODIFIED): Upgrade the existing facilities. Currently, 20  
0027: separate dispersed facilities exist spread over a 5 mile radius. These  
0028: facilities will be modified to provide the necessary maintenance space.  
0029: END DISCUSSION OF ALTERNATIVES  
0030: \*  
0031: BEGIN DATA  
0032: PERIOD OF ANALYSIS IS 25 YEARS  
0033: START YEAR IS 1989  
0034: BASE YEAR IS 1989  
0035: DISCOUNT RATE IS 10.00  
0036: GLOBAL DISCOUNTING CONVENTION IS 2  
0037: PRIMARY ANALYSIS  
0038: COST STORED IN 'ACTUAL' DOLLARS  
0039: END DATA  
0040: \*  
0041: BEGIN ALTERNATIVE 1  
0042: ALTERNATIVE NAME IS 'Upgrade Status Quo'  
0043: ALTERNATIVE DESCRIPTION IS &  
0044: 'Modify and upgrade existing facilities.'  
0045: ECONOMIC LIFE IS 25 YEARS  
0046: EXPENSE ITEM 1 IS 'Initial:Upgrade: ' &  
0047: 2\*4823675.00 23\*0.00  
0048: EXPENSE ITEM 2 IS 'Equipment: : ' &  
0049: 1\*3540684.00 10\*0.00 1\*3540684.00 13\*0.00  
0050: EXPENSE ITEM 3 IS 'Training: : ' &

INPUT LISTING  
LINES 000051-000100

PAGE 0

0051: 1\*25000.00 24\*0.00  
0052: EXPENSE ITEM 4 IS 'Annual:M & R: ' &  
0053: 4\*62960.00 21\*251835.00  
0054: EXPENSE ITEM 5 IS 'Annual:Utilities: ' &  
0055: 25\*178012.00  
0056: EXPENSE ITEM 6 IS 'Personnel:Cost: ' &  
0057: 25\*9301600.00  
0058: EXPENSE ITEM 7 IS 'MHE:Fuel: ' &  
0059: 25\*5000.00  
0060: EXPENSE ITEM 8 IS 'Depot:Transport:Cost' &  
0061: 25\*103443.00  
0062: EXPENSE ITEM 9 IS 'Vehicle:Usage: ' &  
0063: 25\*26440.00  
0064: EXPENSE ITEM 10 IS 'Equipment:Maintenance: ' &  
0065: 1\*0.00 24\*297283.00  
0066: INFLATION FACTORS ARE &  
0067: 10\*0  
0068: DISCOUNT FACTORS ARE &  
0069: 10\*2  
0070: RECURRING COSTS ARE &  
0071: 4 5 6 7 8 9 10  
0072: REFURBISHMENT COSTS ARE &  
0073: 1 2 3  
0074: END ALTERNATIVE 1  
0075: \*  
0076: BEGIN ALTERNATIVE 2  
0077: ALTERNATIVE NAME IS 'New Construction'  
0078: ALTERNATIVE DESCRIPTION IS &  
0079: 'Construction of a consolidated maintenance' &  
0080: 'facility.'  
0081: ECONOMIC LIFE IS 25 YEARS  
0082: EXPENSE ITEM 1 IS 'Initial:Construction:Cost' &  
0083: 3\*9000000.00 22\*0.00  
0084: EXPENSE ITEM 2 IS 'Equipment: : ' &  
0085: 1\*0.00 2\*3123275.00 10\*0.00 2\*3123275.00 10\*0.00  
0086: EXPENSE ITEM 3 IS 'Training: : ' &  
0087: 1\*0.00 2\*25000.00 22\*0.00  
0088: EXPENSE ITEM 4 IS 'Annual:M & R: ' &  
0089: 3\*62960.00 22\*234668.00  
0090: EXPENSE ITEM 5 IS 'Annual:Utilities: ' &  
0091: 3\*178012.00 22\*242030.00  
0092: EXPENSE ITEM 6 IS 'Personnel: : ' &  
0093: 3\*9301600.00 22\*5699175.00  
0094: EXPENSE ITEM 7 IS 'MHE:Fuel: ' &  
0095: 3\*5000.00 22\*1800.00  
0096: EXPENSE ITEM 8 IS 'Vehicle:Usage: ' &  
0097: 3\*26440.00 22\*14730.00  
0098: EXPENSE ITEM 9 IS 'Equipment:Maintenance: ' &  
0099: 3\*297283.00 22\*312570.00  
0100: INFLATION FACTORS ARE &

INPUT LISTING  
LINES 000101-000150

PAGE 00

0101: 9\*0  
0102: DISCOUNT FACTORS ARE &  
0103: 9\*2  
0104: SALVAGE VALUE IS 17453984.00  
0105: RECURRING COSTS ARE &  
0106: 4 5 6 7 8 9  
0107: NEW COSTS ARE &  
0108: 1 2 3  
0109: END ALTERNATIVE 2  
0110: \*  
0111: BEGIN SOURCE/DERIVATION  
0112: STATUS QUO: Initial upgrade costs were estimated based on \$50.00 per sq  
0113: foot. Maintenance and repair was estimated at \$1.31 per square foot.  
0114: Utilities estimates were obtained from DA Facilities Engineering and Hou  
0115: Annual Summary of Operations, the factor was \$.92 per sq. ft.  
0116: Personnel costs were estimated as follows:  
0117:  
0118: \$24,047.00 x 283 employees = \$6,805,301  
0119: \$32,062.00 x 50 contractors = \$1,603,100  
0120: overtime = \$ 893,199  
0121: -----  
0122: Total \$9,301,600  
0123:  
0124: Fuel costs were estimated at \$.84 per gallon consumed.  
0125: Vehicle usage costs are based on historical data:  
0126:  
0127: NEW CONSTRUCTION: Initial construction cost data was obtained from 415-  
0128: Personnel costs were determined by using an average annual salary of  
0129:  
0130: \$24,047.15 x 237 employees = \$5,699,175  
0131:  
0132: Maintenance and repair was estimated at \$1.12 per sq. ft.  
0133: Utilities costs were estimated at \$1.15 per sq. ft.  
0134: Vehicle usage was estimated to be 56% less than status quo.  
0135: Fuel costs were estimated at \$0.84 per gallon consumed.  
0136: END SOURCE/DERIVATION  
0137: \*  
0138: BEGIN RESULTS  
0139: The new construction alternative was found to be the most economical ove  
0140: the 25 year period of analysis. This alternative is recommended to prov  
0141: the necessary 210,000 sf of maintenance space to ensure mission training  
0142: and readiness.  
0143: END RESULTS  
0144: \*  
0145: STOP RUN

APPENDIX E

TERMINAL PROMPTING SEQUENCE WORKSHEET

PRIMARY ANALYSIS

1. Input filename (8 characters max):

\_\_\_\_\_

2. Project title (48 characters max):

\_\_\_\_\_

3. Name, title, and phone number of action officer (48 characters max):

\_\_\_\_\_

4. Organization title (48 characters max):

\_\_\_\_\_

5. Objective of the analysis (48 characters max):

\_\_\_\_\_

6. Discuss all assumptions for this economic analysis.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



7. Discuss all alternatives considered for this economic analysis.

---

---

---

---

8. Period of analysis (60 years max; 2 characters max):

---

9. Start year (4 characters required):

---

10. Base year (4 characters required):

---

11. Discount rate (Enter as a percentage.):

---

12. Global discounting convention (1= beginning-of-year, 2= middle-of-year, 3= end-of-year):

---

13. Do you wish to add a differential inflation index (Y/N)?

—  
[If yes, GOTO 13.1, if no, GOTO 14.]

13.1 INFLATION INDEX TITLE  
(20 characters max)

INFLATION INDEX  
VALUES  
(Enter as decimal numbers;  
enter a value for each  
year in the period of  
analysis.)

---

1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

14. Do you wish to add a residual schedule (Y/N)?

—

[If yes, GOTO 14.1, if no, GOTO 15.]

14.1 RESIDUAL SCHEDULE TITLE (20 characters max)	RESIDUAL SCHEDULE VALUES (Enter as decimal numbers; enter a value for each year in the period of analysis.)
---	---

---

1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

15. Analysis type -- primary or secondary:

Primary

16. Alternative cost input method (1 = as entered,  
2 = in thousands of dollars, 3 = in millions of dollars):

—

ALTERNATIVE # \_\_\_\_\_

17. Alternative name (20 characters max):

\_\_\_\_\_

18. Descriptive title (2 lines of 48 characters max):

\_\_\_\_\_

\_\_\_\_\_

19. Economic life (2 characters max):

\_\_\_\_\_

20. EXPENSE ITEM TITLE  
(3 lines of 12 characters max)

EXPENSE ITEM  
COSTS  
(Enter a cost for each  
year in the period  
analysis.)

1.

1.

2.

2.

3.

3.

EXPENSE ITEM TITLE  
(3 lines of 12 characters max)

EXPENSE ITEM  
COSTS  
(Enter a cost for each  
year in the period of  
analysis.)

4.

4.

5.

5.

6.

6.

7.

7.

8.

8.

9.

9.

10.

10.

11.

11.

12.

12.

13.

13.

14.

14.

EXPENSE ITEM TITLE  
(3 lines of 12 characters max)

EXPENSE ITEM  
COSTS  
(Enter a cost for each  
year in the period of  
analysis.)

15.

15.

16.

16.

17.

17.

18.

18.

19.

19.

20.

20.

21. Expense item number to assign a differential inflation index:

EXPENSE ITEM NUMBER

DIFFERENTIAL INFLATION  
INDEX NUMBER

22. Expense item number to assign a special discounting convention (1= beginning-of-year, 2= middle-of-year, 3= end-of-year):

EXPENSE ITEM NUMBER

SPECIAL DISCOUNTING  
CONVENTION NUMBER

23. Salvage/residual value (Y/N)?

—

[If yes, GOTO 23.1, if no, GOTO 33.]

23.1. Select:

- 1) One time (at the end of the period of analysis)
- 2) Use residual schedule

—

[If 1, GOTO 24, then 33. If 2, GOTO 25.]

24. Salvage value:

\_\_\_\_\_

[GOTO 33.]

25. Select:

- 1) Straight line (SL)
- 2) Declining balance (DB)
- 3) Your own residual schedule (US)

—

[If 1 or 2, GOTO 27. If 3, GOTO 26, 27, then 31.]

26. Residual schedule number (required for US):

\_\_\_\_\_

27. Residual start value (required for SL, DB, and US):

\_\_\_\_\_

28. Residual life (required for SL and DB):

\_\_\_\_\_

29. Starting year of the residual (required for SL and DB):

\_\_\_\_\_

30. Residual rate (optional for DB):

\_\_\_\_\_

31. Residual inflation index (optional for SL, DB, and US):

\_\_\_\_\_

32. Residual discounting convention (1= beginning-of-year, 2= middle-of-year, 3= end-of-year); (optional for SL, DB, and US):

\_\_\_\_\_

33. Expense item numbers for expense items that are recurring costs -- status quo or proposed alternative:

\_\_\_\_\_

34. Expense item numbers for expense items that are refurbishment costs -- status quo alternative:

\_\_\_\_\_

35. Expense item numbers for expense items that are investment costs -- proposed alternative:

\_\_\_\_\_

36. Expense item numbers for expense items that are inherited assets -- proposed alternative:

\_\_\_\_\_

37. Expense item numbers for expense items that are replaced assets -- proposed alternative:

\_\_\_\_\_



38. Discuss all sources and derivations of costs and benefits for this economic analysis.

---

---

---

---

39. Alternative numbers to be graphed (6 alternatives max; 4 graphs max):

---

---

---

---

SENSITIVITY ANALYSIS # \_\_\_\_\_

40. Title (60 characters max); (All data must be entered on one line.):

\_\_\_\_\_

41. Alternative numbers to be included in this analysis (max 2):

\_\_\_\_\_

42. Expense items to change for Alternative A:

\_\_\_\_\_

43. Expense items to change for Alternative B:

\_\_\_\_\_

44. Upper limit of change (Enter as a percent.):

\_\_\_\_\_

45. Alternative number to be ranked as least cost:

\_\_\_\_\_

46. Discuss all recommendations for this economic analysis.

---

---

---

---

---

TERMINAL PROMPTING SEQUENCE WORKSHEET

SECONDARY ANALYSIS

1. Input filename (8 characters max):

\_\_\_\_\_

2. Project title (48 characters max):

\_\_\_\_\_

3. Name, title, and phone number of action officer  
(48 characters max):

\_\_\_\_\_

4. Organization title (48 characters max):

\_\_\_\_\_

5. Objective of the analysis (48 characters max):

\_\_\_\_\_

6. Discuss all assumptions for this economic analysis.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. Discuss all alternatives considered for this analysis.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. Period of analysis (60 years max; 2 characters max):

\_\_\_\_\_

9. Start year (4 characters required):

\_\_\_\_\_

10. Base year (4 characters required):

\_\_\_\_\_

11. Discount rate (Enter as percentage.):

\_\_\_\_\_

12. Global discounting convention (1= beginning-of-year,  
2= middle-of-year, 3= end-of-year):

\_\_\_\_\_

13. Do you wish to add a differential inflation index (Y/N)?

\_\_\_\_\_

[If yes, GOTO 13.1, if no, GOTO 14.]

13.1. INFLATION INDEX TITLE  
(20 characters max)

INFLATION INDEX  
VALUES  
(Enter as decimal numbers;  
enter a value for each year  
in the period of analysis.)

---

1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

14. Do you wish to add a residual schedule (Y/N)?

—  
[If yes, GOTO 14.1, if no, GOTO 15.]

14.1. RESIDUAL SCHEDULE TITLE  
(20 characters max)

RESIDUAL SCHEDULE  
VALUES  
(Enter as decimal numbers;  
enter a value for each year  
in the period of analysis.)

---

1.	1.
2.	2.
3.	3.
4.	4.

RESIDUAL SCHEDULE TITLE  
(20 characters max)

RESIDUAL SCHEDULE  
VALUES  
(Enter as decimal numbers;  
enter a value for each year  
in the period of analysis.)

---

5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

15. Analysis type -- primary or secondary:

Secondary

16. Alternative cost input method (1 = as entered,  
2 = in thousands of dollars, 3 = in millions of dollars):

—

ALTERNATIVE # \_\_\_\_\_

17. Alternative name (20 characters max):

\_\_\_\_\_

18. Descriptive title (2 lines of 48 characters max):

\_\_\_\_\_

\_\_\_\_\_

19. Economic life (2 characters max):

\_\_\_\_\_



20.           EXPENSE ITEM TITLE  
          (3 lines of 12 characters max)

EXPENSE ITEM  
COSTS  
(Enter a cost for each  
year in the period of  
analysis.)

---

1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.
11.	11.

EXPENSE ITEM TITLE  
(3 lines of 12 characters max)

EXPENSE ITEM  
COST  
(Enter a cost for each  
year in the period of  
analysis.)

---

12.

12.

13.

13.

14.

14.

15.

15.

16.

16.

17.

17.

18.

18.

19.

19.

20.

20.

21. Expense item number to assign a differential inflation index:

EXPENSE ITEM NUMBER

DIFFERENTIAL INFLATION  
INDEX NUMBER

---

22. Expense item number to assign a special discounting convention (1= beginning-of-year, 2= middle-of-year, 3= end-of-year):

EXPENSE ITEM NUMBER

SPECIAL DISCOUNTING  
CONVENTION NUMBER

---

23. Salvage/residual value (Y/N)?

—

[If yes, GOTO 23.1, if no, GOTO 33.]

23.1. Select:

- 1) One time (at the end of the period of analysis)
- 2) Use residual schedule

—

[If 1, GOTO 24, then 33. If 2, GOTO 25.]

24. Salvage value:

\_\_\_\_\_

[GOTO 33.]

25. Select:

- 1) Straight line (SL)
- 2) Declining balance (DB)
- 3) Your own residual schedule (US)

—

[If 1 or 2, GOTO 27. If 3, GOTO 26, 27, then 31.]

26. Residual schedule number (required for US):

—

27. Residual start value (required for SL, DB, and US):

—

28. Residual life (required for SL and DB):

—

29. Start year of the residual (required for SL and DB):

—

30. Residual rate (optional for DB):

—

31. Residual inflation index (optional for SL, DB, and US):

—

32. Residual discounting convention (1= beginning-of-year,  
2= middle-of-year, 3= end-of-year); (optional for SL, DB,  
and US):

—

33. Discuss all sources and deviations of costs and benefits for this economic analysis.

---

---

---

---

34. Alternative numbers to be graphed (6 alternatives per graph max; 4 graphs max):

---

---

---

---

SENSITIVITY ANALYSIS # \_\_\_\_\_

35. Title (60 characters max; all data must be entered on one line):

\_\_\_\_\_

36. Alternative numbers to be included in this sensitivity analysis (max 2):

\_\_\_\_\_

37. Expense item numbers to change for Alternative A:

\_\_\_\_\_

38. Expense item numbers to change for Alternative B:

\_\_\_\_\_

39. Upper limit of change (Enter as a percent.):

\_\_\_\_\_

40. Alternative number to be ranked as least cost:

\_\_\_\_\_

41. Discuss all recommendations for this economic analysis.

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## APPENDIX F

### INTERFACE WITH THE PAX MAINFRAME SYSTEM

#### INTRODUCTION

The end result of most economic analyses is to support a DD Form 1391 project proposal. The mainframe version of ECONPACK and the DD FORM 1391 Processor are applications available on the Programming, Administration, and Execution System (PAX). It is a simple process to transfer an economic analysis file from the mainframe version of ECONPACK to a DD FORM 1391 form. In order to transfer EA data from PC-ECONPACK to the DD Form 1391 processor, a link must be made between PC-ECONPACK and the mainframe environment. This link is provided by the PC-ECONPACK Communications System.

#### SETTING UP THE PC-ECONPACK COMMUNICATIONS SYSTEM

In addition to the five PC-ECONPACK floppy diskettes provided with the PC-ECONPACK your manual, there is a sixth diskette labelled ECONPACK COMMUNICATIONS. With this diskette, your personal computer can communicate with the PAX mainframe system. Once the PC-ECONPACK Communications System is installed, you will be able to transfer (upload) a single input file from PC-ECONPACK to the mainframe system or (download) from the Mainframe System back to your personal computer. Before you use the communication package, you must perform some preliminary steps.

A separate sub-directory must be created within the ECONPACK sub-directory. The following DOS commands should be followed in order to accomplish this:

STEP 1: At the C> type:

```
C>CD\ECONPACK [ENTER]
```

STEP 2: A second C> appears on the screen. Type:

```
C>MD COM [ENTER]
```

STEP 3: Another C> should appear on the monitor. Type:

```
C>CD COM [ENTER]
```

Next, copy the PC-ECONPACK Communications System files from the floppy diskette to the hard disk on your personal computer. To install the system files from the floppy diskette to your hard disk, do the following:



STEP 1: Insert the floppy diskette in the A-drive and shut the drive door.

STEP 2: At the C>, type:

CCOPY A:\*. \* [ENTER]

You are now able to use the PC-ECONPACK Communications System with PC-ECONPACK.

{At the next C> type in: ECONPACK and call up the PC-ECONPACK main menu. Press the number [3] to choose the File Maintenance Facility sub-menu. From this sub-menu select option number [7] for Upload/Download an Input File.} This calls the ECONPACK communications system.

ECONPACK COMMUNICATIONS SYSTEM

Date: 01-04-80 Time: 00:13:26

Setup Menu

TYMSHARE

ONTYME

1

2

3

Q

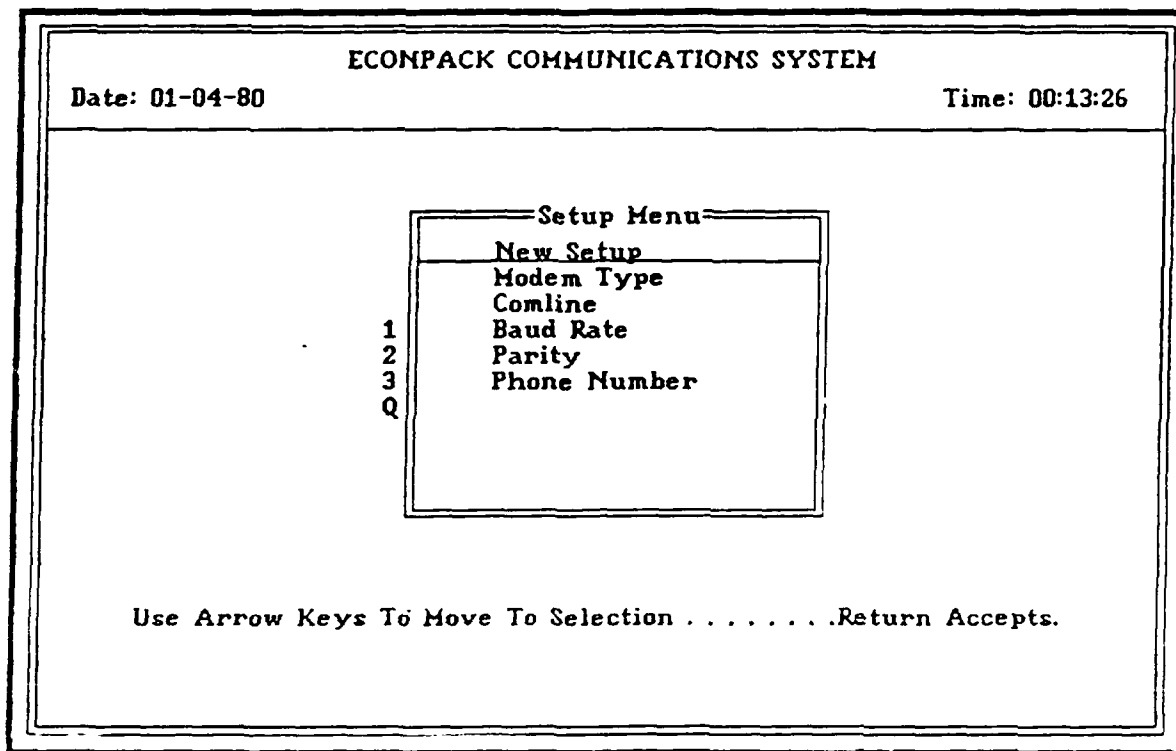
Use Arrow Keys To Move To Selection . . . . .Return Accepts.

Select Computer Parameters to Edit

Figure F-1 Initial Setup menu

The first time the ECONPACK communications system is used, you must specify the communications parameters for the particular personal computer you are using. This is done through a series of menus by which you define each parameter. {When the first menu appears on the screen (see Figure F-1), press [Enter] to select Tymshare (Tymshare, Inc., a wholly-owned subsidiary of McDonnell Douglas, Inc., provides a commercial mainframe computer system on which the PAX system is run. It is accessed through

TYMNET, a worldwide timesharing network).} When you select Tymshare, a second Setup menu of specific communications parameters appears on the screen as shown in Figure F-2.



```

ECONPACK COMMUNICATIONS SYSTEM
Date: 01-04-80                               Time: 00:13:26

          Setup Menu
          New Setup
          Modem Type
          Comline
1         Baud Rate
2         Parity
3         Phone Number
Q

Use Arrow Keys To Move To Selection . . . . . Return Accepts.

```

Figure F-2 Specific Communications Parameters Setup Menu

This Setup menu has six choices. The first selection, "New Setup," allows you to make changes to all five of the parameters (the five parameters are the same as the other five options on the Setup menu). When "New Setup" is chosen, five different sub-menus will appear on the screen (in sequence) prompting you to make a selection for each parameter. The other five menu selections on the Setup menu allow you to change just one of the parameters and avoid going through each individual parameter menu.

{Move the bar cursor to "New Setup" and press [Enter].} The screen displays two different menu choices, Hayes Smart Modem or Network. The cursor should be under the Modem option. {If your personal computer is part of a network, then move the cursor to network and press [Enter]. If it is not, move the cursor to the Modem option and press [Enter].} Note: If you are planning to use a modem, it must be 100% Hayes compatible.

The next menu to appear on the monitor is the menu for the communications port. The bottom of the screen should have a

statement "Select Communications Port." The communications port is the port your modem is using. {If you do not know which port your modem is using, move the bar cursor to "Comline 1" and press [Enter].} If you have chosen the wrong port, the system will return you to the Setup menu when you try to connect with Tymshare. At that time change the port to Comline 2.

The third parameter required is the Baud Rate. Most likely you will be using a 1200 baud modem, but check your modem to be sure. {Move the cursor to the applicable baud rate and press [Enter].}

A menu appears listing five parity choices. The PAX system uses "Even" parity. {Move the bar cursor to "Even" and press [Enter].}

The last parameter to initialize is the phone number. {Move the cursor to "New Number" and press [Enter].} The menu disappears and you are prompted to enter the new phone number at the bottom of the screen with:

Enter Phone Number  
0-0-000-000-0000

{Enter the Tymshare number for your area in a right justified manner (e.g., 0-0-000-691-8200).} After the last digit is entered, PC-ECONPACK prompts you for a Yes or No response:

Is This Correct (Y/N)? [Y]  
0-0-000-691-8200

ECONPACK COMMUNICATIONS SYSTEM	
Date: 01-04-80	Time: 00:13:26
<div style="border: 1px solid black; display: inline-block; padding: 5px 15px; margin: 0 auto;">MENU</div>  <div style="text-align: left;">           1. Upload Input File            2. Download Input File            3. Econpack Distribution            Q. Quit         </div>  <div style="text-align: center;">           Select Option     [ ]         </div>  <div style="text-align: right;">           &lt;Alt&gt; H for Help         </div>	

Figure F-3 PC-ECONPACK Communications System main menu

{If the number is typed in correctly, just enter "Y". Enter "N" if the number is incorrect. You will be able to re-enter the phone number.} This is the last of the parameters that must be defined. Once these parameters have been initialized on your hardware, you are ready to begin using the communications package.

After you have specified the last communications parameter (telephone number), the PC-ECONPACK Communication System Main Menu appears on the screen.

#### UPLOADING FILES TO THE PAX MAINFRAME SYSTEM

Only input files may be uploaded. Report files may not be uploaded. Once an input file is uploaded it is available for use in mainframe ECONPACK to (1) access from a DD Form 1391 and generate reports which are automatically put into the Form 1391 or (2) run with mainframe ECONPACK (usable as if it had been generated on the mainframe).

The first step of the transfer process is to specify whether the file transfer will be uploaded to the mainframe or downloaded to

AD-A192 949

PAX ECONOPACK ECONOMIC ANALYSIS PACKAGE USERS MANUAL  
(U) ARMY ENGINEER DIV HUNTSVILLE AL H W HANSON FEB 88  
HNDSP-86-117-ED-ES-REV

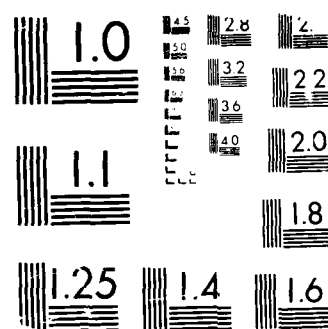
5/5

UNCLASSIFIED

F/G 5/3

NL





MICROCOPY RESOLUTION TEST CHART  
 NBS 1963-A

PC-ECONPACK. Figure F-3 shows the menu with four choices. You have a choice of Option 1 for uploading the input file or option 2 for downloading the input file. Option 3, "ECONPACK distribution," is a function which is currently inactive. Option 4 "Quit" allows you to cancel the exercise at this point and returns you to the File Maintenance Facility sub-menu.

**ECONPACK COMMUNICATIONS SYSTEM**

Date: 01-04-80 Time: 00:02:47

Enter Logon

Enter Password

Figure F-4 Logon I.D. and password entry screen

From this screen you can access several functions that are related only to the PC-ECONPACK Communications System. Press <Alt>H (simultaneously press the [Alt] key and the letter "H") and a separate Help menu appears listing six available functions. Press any key and you are returned to the preceding menu. All the functions are self-explanatory with the exception of <Alt>W, "Watch Me Logon." This function is used in conjunction with the modem type "Network". It will be explained later in this chapter.

There is no cursor on the particular menu in Figure F-3. (Press [1] to enter Option 1 "Upload Input File.") Another screen appears on your monitor requiring you to enter your I.D. and your password as in Figure F-4.

{Enter your Logon I.D. and press [Enter] then type in your secret password (the screen will display only "X's") and press [Enter].} (Note that these two entries will not be stored on your disk.) A Yes/No prompt appears at the bottom of the screen:

Is This Correct? (Y/N) [Y]

{If the data is correct, type in [Y]. If your response is "N", you are able to re-enter your I.D. and Password.} You are then prompted to enter the name of the file to be uploaded. A View function (<Alt>V) is provided at the bottom of the screen in the event you do not remember the exact file name. {Type <Alt>V and a list of the PC-ECONPACK input files is displayed.} The Directory of input files has a bar cursor which can be used to select the desired file to be uploaded. {Scroll the cursor to the file you want uploaded and press [Enter].} The Directory of files disappears and the file name chosen appears in the box remaining on the screen. {If you do not want to select one of the files in the directory list, press the [Esc] key and the directory of files will be erased from the screen leaving you with the Enter File Name prompt}. Alternatively, you may just type in the file name without referring to the View screen (no file extensions are necessary). After a file name has been entered, a Yes/No prompt again appears at the bottom of the screen just like the prompt above. {Type in "Y" and PC-ECONPACK proceeds to log you onto the Tymshare system and begin the file transfer process.}

If you select "Network" when specifying the modem type, an extra procedure is required at this point before you can be connected with Tymshare.

If your personal computer is part of a local area network (LAN), it is necessary for you to navigate through your LAN before you can connect with Tymshare. The procedure for doing this is specific to your LAN and probably would not work on another office's network. After you have completed entering your Logon I.D., Password, and the file name, your monitor should give you your LAN's prompt (i.e.: #). At this point begin the procedure to navigate through your LAN.

If you desire to automate the procedure for logging on to Tymshare through your LAN, the <Alt>W function can be used. Before you start your procedure to connect to Tymshare, type <Alt>W. This invokes the "Watch Me" function. The "Watch Me" function records your procedure for navigating through your LAN. When you see the "Please log in:" prompt on your screen, you have successfully navigated through your LAN. At this point turn off the "Watch Me" function by typing <Alt>W a second time. Give control back to the computer by typing <Alt>C. The computer continues with the actual log on. The computer has now memorized the log-on procedure for your LAN. From this point forward, each



time you upload or download a file, the system will, unless instructed otherwise, attempt to make the connection with Tymshare for you with the procedure recorded by the "Watch Me" function.

Before the system automatically logs you on using your "Watch Me" recorded procedure, there is a few seconds delay. During this period you can choose to override the pre-recorded procedure by typing <Alt>S. This allows you to manually perform the connection to Tymshare through your LAN.

Another useful function is "Auto Logon." This function is used if you already have a "Watch Me" function recorded and you are in the process of performing the log on manually. If, for some reason, you change your mind and wish to use your "Watch Me" recorded procedure, you would use the "Auto Logon" function by typing <Alt>L. The "Watch Me" recorded procedure immediately overrides the manual procedure at any point before completion of the manual log on process.

#### DOWNLOADING FILES FROM THE PAX MAINFRAME SYSTEM

The procedure to download a file from the mainframe computer to PC-ECONPACK is much the same. {At the PC-ECONPACK communications system main menu select Option 2 "Download Input File" by pressing the number [2].} You are prompted with the same log on sequence as was described for uploading. After entering your log on I.D. and password, the computer immediately connects you with Tymshare and logs you on. After log on, you are prompted for the file name you wish to download. The <Alt>V function can also be used at this time to view the available list of files that can be downloaded from the mainframe. {As in the uploading process, you can select the file using the up and down-arrow keys and pressing [Enter].} You may also type the file name in directly (no file type or file mode is necessary). {Once the file has been selected, you confirm the choice by typing "Y" and the system proceeds with the file transfer process.}

#### POSSIBLE PROBLEMS

If you are having trouble making the connection with the Tymshare system, most likely changing one of the communication parameters will solve the problem. First, be sure you have correctly entered the Tymshare dial-up telephone number for your area. Assuming the telephone number is correct, the next most likely parameter to change is the communications port. Earlier it was suggested you should choose Comline 1 as the communications port unless you know for certain that your communications port is Comline 2. Where it was suggested to choose Comline 1, change the port to Comline 2. This is done by typing <Alt>S at the main

menu and you are returned to the Setup menu. Select "Comline" and when the communications port menu is displayed, select Comline 2.

If changing the communications port does not solve the problem of connecting to Tymshare, change the parameter for the Baud rate. At the main menu type <Alt>S again to return to the Setup menu. Scroll the cursor to the Baud Rate option and press [Enter]. Check your modem for the Baud rate and select the corresponding rate on the menu by scrolling the bar cursor. If you can not locate the Baud rate on the modem itself, you can try the other menu choices in a trial and error fashion.

The last parameter that could possibly be causing a connect problem is the parity. The PAX system uses "Even" parity. Your local area network could be using different parity. You should check with your local area network manager for the correct parity. The same method is used for changing the parity parameter as the other communications parameters.

END

DATE

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